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LAND RESOURCES

# of Fluvanna County Virginia

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UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
in cooperation with
Virginia Agricultural Experiment Station

JULY 1957

PREFACE

This report is intended chiefly for those who are interested in improving agriculture in the Virginia Piedmont, especially in the Nason-Tatum soils areas. Because Fluvanna County was considered somewhat typical of these areas, studies were made in 1945 and 1950 of present and potential uses as related to soils, suitability of the land for farming, and methods of improvement. The studies were made by representatives of the Virginia Agricultural Experiment Station and the United States Department of Agriculture. The marshaling of facts obtained by first-hand surveys and the application of the findings permit the agricultural industry to progress. This report contains many basic facts concerning the land-resource base of Fluvanna County's agriculture, the present uses of these lands, the changes that are taking place in land use, and the possibilities for improvement.

Many people contributed to this report. The survey was initiated in 1945 by Everett C. Weitzell, formerly of the Bureau of Agricultural Economics, part of which is now the Farm Economics Research Division, Agricultural Research Service; S. S. Obenshain, Virginia Agricultural Experiment Station; and C. S. Simmons, Soil Conservation Service. The following representatives served on the committee that formulated specific plans for the study:

H. N. Young, Virginia Agricultural Experiment Station
S. W. Bondurant, Soil Conservation Service
T. B. Hutcheson, Virginia Agricultural Experiment Station
John E. Mason, former Bureau of Agricultural Economics
S. S. Obenshain, Virginia Agricultural Experiment Station

Representatives of the United States Forest Service and of the Department of Conservation and Development, Virginia Forest Service, provided valuable data pertaining to forest conditions within the general area.

The fieldwork for the economic phase of the survey was carried out by Joe F. Davis, A. T. M. Lee, John E. Mason, and R. J. Saville of the former Bureau of Agricultural Economics. Claude C. Haren, Farm Economics Research Division, Agricultural Research Service, analyzed the survey data and prepared this publication.

Special acknowledgment is made to H. M. Love, Head, Department of Agricultural Economics, Virginia Agricultural Experiment Station, and H. H. Wooten, Farm Economics Research Division, Agricultural Research Service, for guidance of the project and especially for its completion.

Special acknowledgment is due also to H. C. Porter, Virginia Agricultural Experiment Station, and the other members of the soil-survey party for their technical assistance in correlating the economic data with those compiled for soils and related conditions. In addition to the use of the facilities of their offices, P. H. France, County Agricultural Agent, A. S. Haden, Clerk of Court, and other county officials offered many constructive suggestions both for conducting the survey and concerning future prospects in Fluvanna County. Acknowledgment is similarly extended to the farmers, timber operators, and other residents, many of whose observations of opportunities for farming and timber growing, based on long experience with the local situation, were incorporated in this report.

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Errata

LAND RESOURCES OF FLUVANNA COUNTY, VIRGINIA. U. S. Dept. Agr. Agr. Res. Serv. ARS 43-31.

Line 4, paragraph 6, page 1, should read:

associations like the Manteo-Tatum-Nason and the Louisburg-Appling-Cecil

LAND RESOURCES OF FLUVANNA COUNTY, VIRGINIA

By Claude C. Haren
Farm Economics Research Division
Agricultural Research Service
United States Department of Agriculture

SUMMARY

Fluvanna County contains a large acreage of relatively poor but improvable soils. More than 100,000 acres, or three-fifths of its total land area, would be suitable for crops. Nearly 40,000 acres, or an additional one-fifth, could provide permanent pasture.

Rainfall is generally ample and the frost-free season is long enough for most of the farm crops commonly produced in Virginia.

Comparatively heavy applications of fertilizer and lime and adoption of other measures to improve productivity would be needed, especially on the Nason and Tatum soils.

More than half the area of the county is situated on land that ranges from level to undulating. An additional fourth is on rolling land. Thus, modern farm machinery could be used to good advantage on Nason, Tatum, and similarly situated soils. These soils would also be fairly easy to conserve.

Past cultivation has resulted in moderate to severe erosion on only about 10 percent of the acreage in the county.

About 90 percent of the area of such soil associations as the Nason-Tatum-Manteo would be suitable for crops. Permanent pasture could be established on most of the rest. Only about 10 to 15 percent of the area of associations like the Nason-Tatum-Manteo and the Louisburg-Appling-Cecil would be adapted to cultivated crops. Although a fairly high percentage of the land in these associations might be developed for pastures, the small acreages and poor location of the potential cropland available limit agricultural possibilities.

The complete development of the land resources of the county would require that woods or brush be cleared from approximately two-thirds of the land. About a fourth of the acreage in crops and about an eighth of that in pastures probably would need to be shifted to more conservational uses.

No structural or other physical defects have been found that would prevent the successful development of such soils as the Nason and Tatum with modern methods of farming. Crop and pasture mixtures on these soils on nearby experimental plots have responded favorably to good soil management. Where similar practices had been adopted by individual farmers, excellent crops of corn, wheat, and clover were observed in 1945 and again in 1950.

Most of the existing crop and pasture fields would need to be enlarged in order to develop the better situated soils, utilize farm machinery efficiently and reduce the cost of erosion control. In addition to application of fertilizer and lime and the seeding of adapted grass-legume mixtures, measures to control brush and sprout growth would be needed to provide better pastures.

Both pines and hardwoods make poor growth on Nason, Tatum, and other soils not underlain by granites. Under more nearly optimum physical conditions, increased fire protection, selective cutting, and removal of undesirable trees should greatly increase the future value of the timber crop.

Depending on the kind, number and size of the trees, the cost of complete clearing and stumping of additional land at 1956 prices probably would amount to about $75 to $100 per acre. In many instances, at least part of the costs could be met through the sale of pulpwood and other timber products. By cutting the trees close to the ground and applying measures to control sprout growth, pastures might be established on such land without incurring the heavy costs usually associated with removal of stumps.

It is estimated that there are approximately 2,500 privately owned properties in Fluvanna County, exclusive of those in town and village lots. About 350 of these properties, including many idle, abandoned, and completely forested tracts, could be developed into relatively large-scale farms. Without additional consolidation, most of the more than 2,000 remaining units could be developed for part-time farming or for residential purposes.

Further consolidation to increase the crop and pasture base available for farming is likely to continue to be most readily feasible where the adjoining tracts are fairly large. Consolidation either for farming or for growing timber would be more difficult when the tracts are small and in unsettled estates.

Many existing properties in the county would require the construction of a dwelling and other buildings. In other instances, major additions or repairs to buildings would be necessary.

At 1956 prices, many of the larger properties, especially those in partly developed or timber tracts, probably could be bought for $20 to $40 an acre. The cost per acre of places with modern dwellings and other conveniences generally would be greater.

Fluvanna County contains a network of all-weather roads, and electric power transmission lines. Its railways provide north-south as well as east-west connections. The county has consolidated schools, many churches, and other community assets.

More farming and additional industries are needed to increase local incomes and to utilize effectively existing public facilities. Only about a fifth of the farmers in Fluvanna County reported gross cash incomes from farming of $1,200 or more in 1954. About two-thirds sold less than $250 worth of products, or income from other sources exceeded the value of farm products marketed. The chief sources of additional income for farmers and other local residents consisted of farm and timber work, and employment in Fork Union, Scottsville, and other nearby towns, or by the railroad.

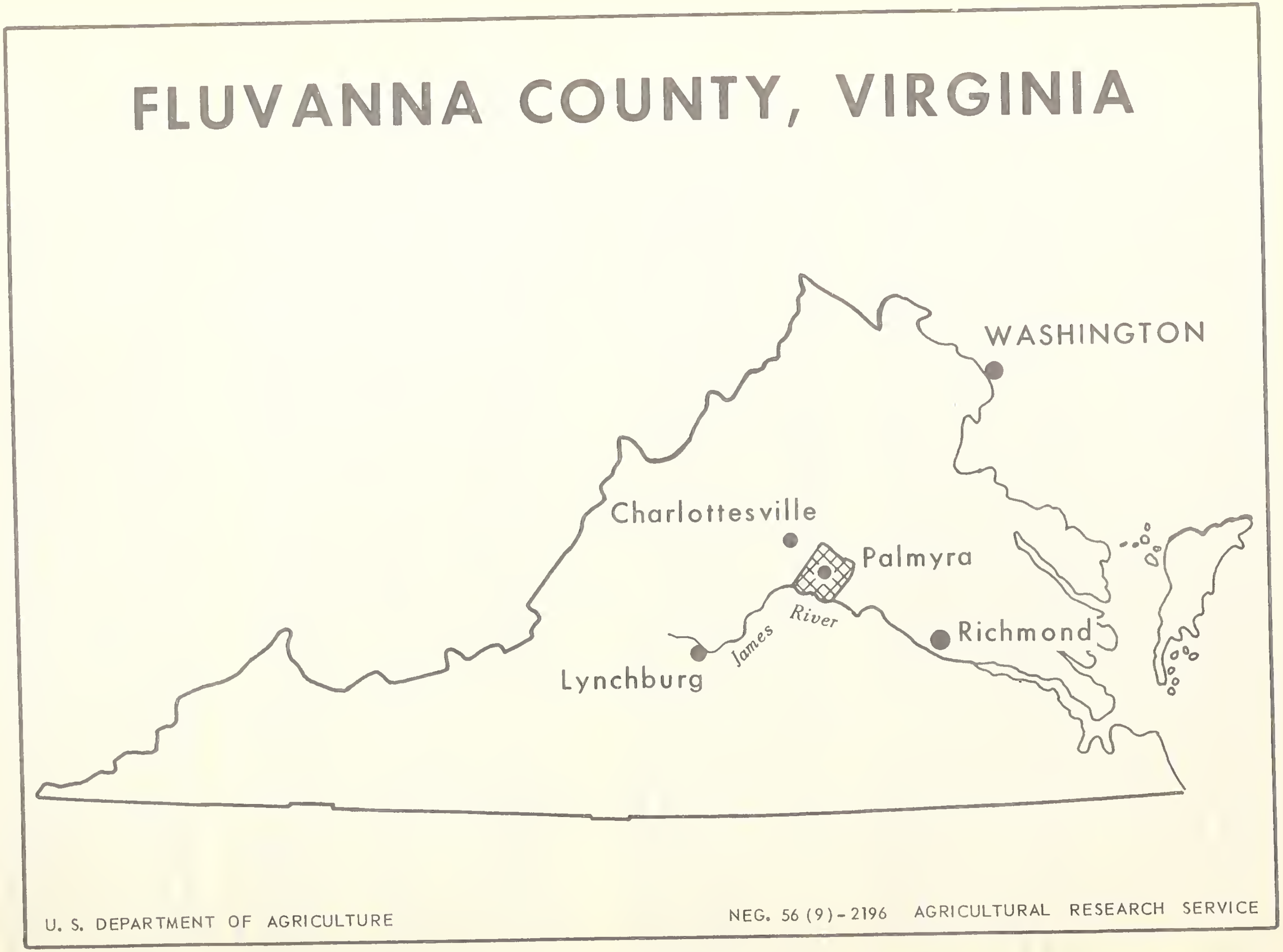
Before buying, a prospective farmer should ascertain what acreages are potentially available for crops and pastures in the tract or tracts he is considering. He should estimate the additional costs of clearing and fencing the land and of applying soil-improvement measures. These costs would include also the additions or renovations to the dwelling and other buildings necessary to accommodate his family and to carry out the types of enterprises planned. His plans for financing should include allowances for the purchase of the farm machinery and livestock needed to equip and stock the place. If interested in part-time farming, he should also ascertain the sources of local employment that are available. In order to eliminate any future uncertainty over the title, an accurate survey should be obtained for the real estate purchased.

Much of the capital required for expansion of farming as well as for development of local industries would have to come from sources outside the county. Until recently, opportunities for establishing a more diversified agriculture were largely lacking. Most of the existing investment in land, improvements, and debt reduction was derived from other businesses or labor. Finding it difficult either to get started at farming or to obtain local work, a large number of persons in each new generation have moved to farms or industrial centers elsewhere.

THE PROBLEM

Fluvanna County, which lies in central Virginia, includes a large acreage of land that could be developed for agricultural purposes, chiefly through clearing and adoption of good soil and farm-management practices (fig. 1). Approximately 60 percent of its land area is physically suited to production of crops. An additional 20 percent would be at least moderately productive for permanent pasture. It is now more than two centuries since settlement began in the county, but three-fourths of its land is still in forest and brush. Only about half of its ownership units are occupied, and few of its families obtain their entire livelihood from farming. In this, as in adjoining counties, widespread attempts have been made in the past to cultivate land that is adapted mainly to forest use. In contrast, less than 60 percent of the acreage of its two potentially most important agricultural soils has ever been in cultivation.

These soils--the Nason and Tatum--occupy about 40 percent of the land area of the county. Even more significantly, they make up more than three-fifths of the area suitable for crops. Opportunities for farm mechanization probably equal those found anywhere in the Piedmont. Except on the more strongly rolling and hilly land, previous cultivation has not resulted in serious erosion or gullying. Given complete treatment on experimental plots, impressive yields of crops and pastures have been recorded. Where lime and liberal quantities of fertilizer have been applied and other good soil-


FLUVANNA COUNTY, VIRGINIA
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Richmond
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James River
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Figure 1.- Fluvanna County is located on the James River and in the Middle Piedmont of Virginia.

management practices followed, crop yields obtained by local farmers compare favorably with those harvested on other soils. Many abandoned and completely forested tracts contain sufficient land for the development of full-time farms that would combine production of feed and forage with either dairying or the raising of beef-cattle.

The Nason and Tatum soils are part of a belt that occupies about a million acres in the Virginia Piedmont. This belt lies in a northeast-southwest direction, is about 160 miles in length, and varies from a few rods to 10 or 11 miles in width. The Roanoke River, which forms the boundary between Campbell and Pittsylvania Counties, represents the approximate southern limit of the belt. The belt extends to the Potomac River along the northern boundary of Fairfax County. Small areas have also been identified in nearby Maryland.

As in Fluvanna County, the woods throughout this belt are occasionally broken by substantial farmsteads situated in the midst of well-tended fields and equipped with electricity and other modern conveniences. But on nearly identical soils and along the same improved highway, old field pine has enveloped the cleared areas of what were once farms. In some instances, the dwelling is occupied and an effort is made to keep the brush from the farmstead and garden. In others, houses and buildings are vacant and are beginning to collapse. Some have disappeared except for chimneys and foundations. Especially when abandonment occurred as long as 100 or more years ago, practically all of the initial stand of old field pine has been harvested and replaced by hardwoods. Even here, however, it is often possible to find old fence rows, stone piles, tobacco and corn ridges, and other evidences of past cultivation. These signs of previous clearing and use for crops are often found on hilly to steep, erodible Manteo soils. When, as happens frequently, someone reoccupies an idle or abandoned place, repairs the old buildings, or starts new ones, it is usually the same land that is recleared for the fresh venture.

Impressed by such features as the favorable lay of the land, its relatively low price, and the availability of good roads and other facilities, farmers have made many inquiries in recent years concerning opportunities within this belt. Should these and other people be encouraged to establish farms on these soils? Can such shortcomings as limited natural fertility be overcome by applying already existing know-how? What economic and related factors have contributed to their limited development for agricultural purposes? In addition to better management of soils, what can be done to help both present and prospective farmers develop successful farms within this belt? How many existing ownership units include a sufficient acreage for full-time farming? What are the prospects for consolidating small holdings, or for enlarging off-farm sources of employment and income for part-time farmers? Would probable returns justify the costs of acquiring and improving the land, adding, renovating, or repairing the dwelling and other farm buildings, and equipping and stocking the place? If expansion of farming is both physically and economically feasible, what financial arrangements will be needed to enable farmers to enlarge their scale of operations or to acquire properties for development into farm units?

Method of Study

In response to the need for answering these and similar questions, a joint soil and land utilization survey was made in Fluvanna County. A detailed study could not be made of the entire belt. From reconnaissance studies, this county was known to include an exceptionally high ratio of Nason, Tatum, and associated soils. Soils had not previously been surveyed. Economic studies of this region had established that similar use and ownership patterns existed in adjoining counties of the James River or middle Piedmont area. It was believed, therefore, that findings from an intensive study of the situation in Fluvanna County would be fairly applicable to a comparatively broad area.

This method of study stemmed from a growing awareness that soil scientists and economists could more effectively evaluate prospects for farming by working together. This cooperation was achieved by integrating the investigation undertaken by the latter with the results of the soil survey. The work of the two groups was also initiated and carried out simultaneously. As a result, mutually useful data were available for a comparable time period and the exchange of ideas as well as soils and economic data was greatly facilitated.

Design of the Sample

Fifteen sample areas were selected for detailed study at regular intervals from a grid overlay which subdivided a map of the county into squares (fig. 2). The sides of each square were 1½ miles. Each segment contained 1,440 acres. Despite the losses in area when a segment extended beyond the boundaries of the county or embraced water as well as land, this provided a sample that slightly exceeded 10 percent of the total land area.

Identifying and Mapping Properties

In order to prepare ownership, soil, and land use maps for each sample area, the 15 segments were outlined on aerial photographs. Maps and other records for farmers who were participating in the agricultural conservation program provided information for plotting the boundaries of one or more ownership tracts in each sample area. By consulting the deed books and other county records, adjoining tracts were successively identified and mapped. Where subdivision of the land had been most pronounced, it was necessary to carry the incomplete map to the area and interview the owner or other residents of the neighborhood. Once this additional information was obtained, the records were again consulted, in order to confirm ownership of the remaining properties. All tracts with approximately 50 percent or more of their areas located within the sample areas were included. Adjoining tracts held by the same person or persons were combined as a single property. Those not adjoining were classed as separate properties.

A total of 300 separate properties, aggregating 20,241 acres, were in the 15 sample areas. The distribution patterns shown for physical land class, land use, and ownership compared closely with other data for the county.

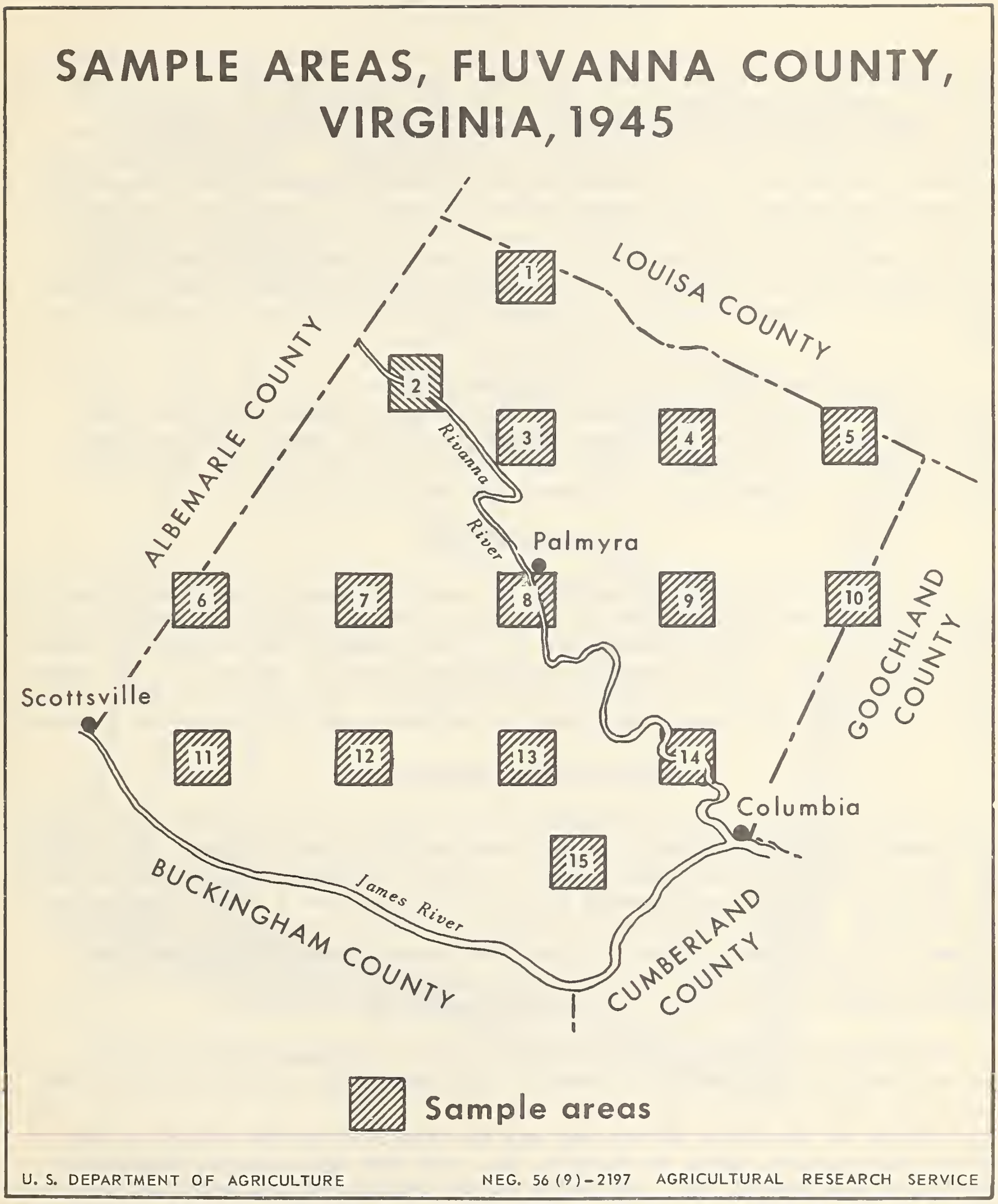


Figure 2.- The 15 individual segments provided a sample of 20,241 acres, or slightly more than 10 percent of the area of the entire country.

Scope and Limitations

This report supplements the Soil Survey for Fluvanna County by presenting information on how its soils are used, owned, and operated. It lists the most important economic and related factors favorable to or likely to limit future agricultural development. Probable future opportunities are outlined in general terms and not for specific farms. The information given includes the number of acres suitable for farming purposes which prospective residents can expect to find among various classes of properties. Estimates by local farmers and timber growers are quoted for comparative crop yields, pasture-carrying capacities, and rates of timber growth. When available, information is also included for the chief costs or charges likely to be incurred in acquiring, clearing, and developing land in this and nearby counties.

Data from the 1950 and 1954 Censuses of Agriculture and other current information were also incorporated in this report. These data show that there has been very little overall change in farming activity since the field survey was completed. They also point to an increase in real estate values but to a lower rate of turnover than existed in 1945.

THE LAND RESOURCES

The soils of Fluvanna County are its most important natural resource. 1/ Slightly more than three-fifths of the total area is physically adapted to crops (fig. 3). Although unsuitable for crops, another fifth would be suited to pasture. Thus, from a physical standpoint, about 80 percent of the total area of the county could be developed for agricultural purposes. This would leave only about 20 percent that would be suitable mainly for forest purposes.

The Physical Setting

Fluvanna County is located within the Piedmont Plateau and in the middle watershed of the James River. As in other parts of the Piedmont, the valleys are narrow and the slopes that border the James, Rivanna, and Hardware Rivers, and the other larger watercourses range from a hilly to a bluff-type relief. Consequently, most of the areas of smoother land are confined to the broader ridges or interstream divides. Elevations range from about 200 feet near Columbia in the southeastern corner to a little more than 500 feet on the higher ridges in the western and northern parts of the county.

The mean annual precipitation reported for a 50-year period at the weather station at Columbia averaged 41.8 inches (18, p. 100). 2/ From 1924

1/ Copies of the Soils Survey map may be consulted in the office of the County Agricultural Agent at Palmyra, Va., and the Agricultural Experiment Station at Blacksburg, Va. The Soils Survey report and map were not available in published form as of June 1955. For more details concerning land and other resources of this and nearby counties see 3, 4, 6, 9, 11, 17, and 23.

2/ Numbers in parentheses refer to Literature Cited, page 73.

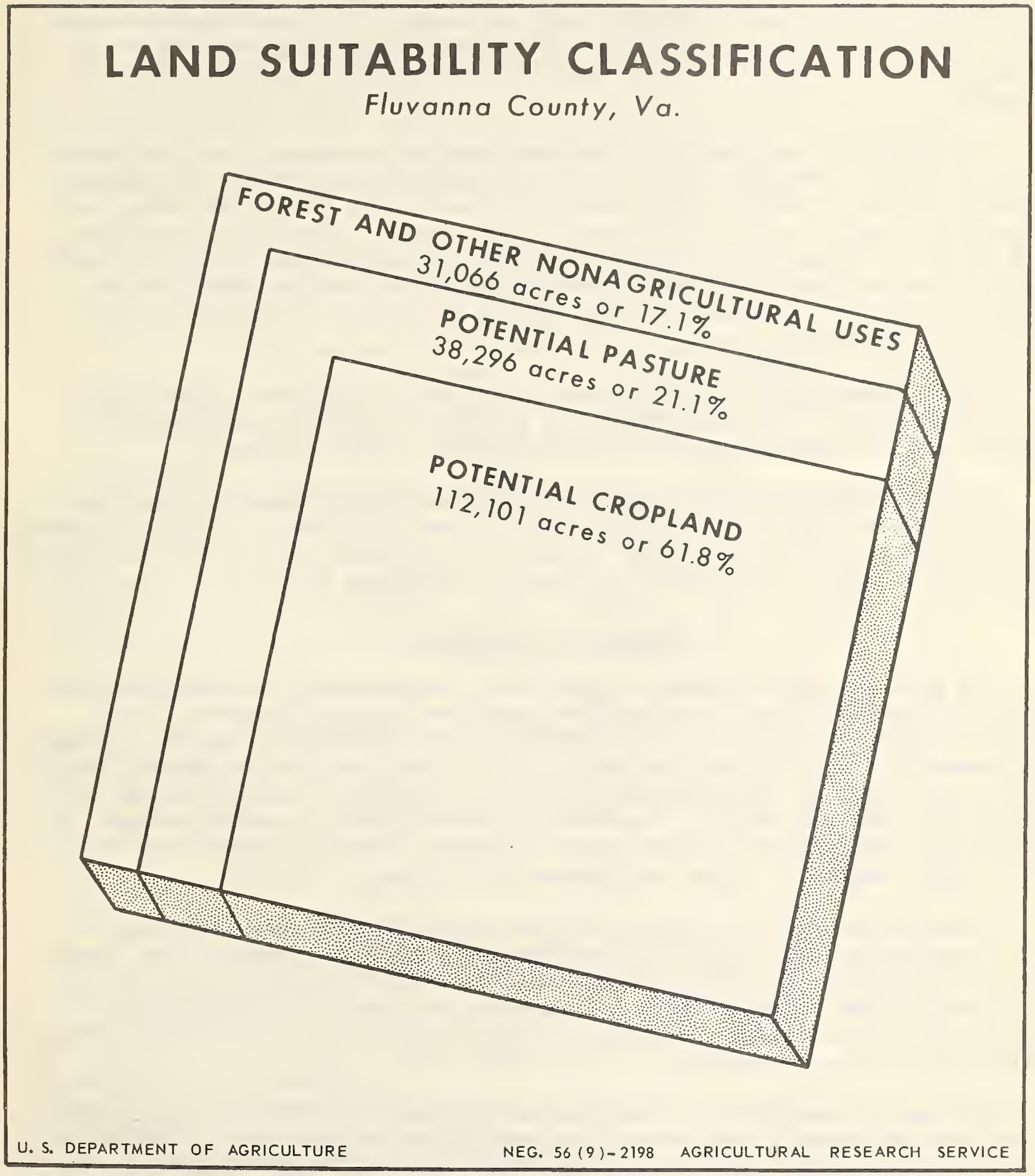


Figure 3.- Approximately three-fifths of the land area of Fluvanna County could be developed for crops, and an additional one-fifth would be suited to permanent pasture.

to 1948, this annual total ranged from a high of 58.42 inches in 1937 to a low of 24.24 inches in 1930. In 14 of these 25 years, rainfall exceeded 7 inches during 1 or more months. Most of this heavy rainfall resulted from one or more heavy downpours in the growing season. This contributed to severe washing and gullying, particularly on the steeper slopes of fields in clean-cultivated crops. It also resulted in local or even more widespread floods.

Only part of the precipitation in winter falls as snow, and the ground is not frozen to an appreciable depth for any length of time. The monthly totals received, however, are usually much lower than during the other seasons of the year. As in other parts of the region, relatively protracted dry spells are also fairly common. In some instances, such as in 1953 and 1954, these periods of deficient rainfall extend beyond the first season. Even when they are confined to a few weeks, they result in reduced crop yields and depleted pastures.

The average length of the frost-free season is 186 days. This is too short for cotton, although attempts to grow the crop were once made. The season is long enough for other important field crops to mature.

An adequate supply of water for both livestock and human consumption usually can be located by sinking a well to the water table in the zone above solid rock. A number of potential sites for development of water or electric power are located on the James, Rivanna, and Hardware Rivers.

Physical Land Classes

As in other counties where recent soil surveys have been completed, the soils of Fluvanna County were grouped into five physical classes. This classification represented an evaluation by soil technicians of the combined influence of the principal characteristics of each soil on its general suitability for crops. These characteristics were observed or recorded in the field or determined through laboratory analysis. They included texture, structure, consistence, organic matter content, chemical content and character, depth, moisture, slope, and degree of erosion.

These data then were applied to the rating of each soil according to (1) its relative capacity to produce the crops commonly grown in the county, (2) the relative ease with which it could be worked and farmed with machinery, and (3) the relative effort required to maintain it in cultivation. Once these ratings had been applied, the various soils were then grouped in five physical land classes.

As thus classified, the combination of less desirable features becomes successively greater from First-Class through Fifth-Class soils. Their combined influence would not be great enough to make any Third-Class soils unfit for cultivation. Even though they might prove to be fairly productive for pastures, the Fourth-Class soils would be too difficult to work or to conserve to be feasible for cultivated crops. The Fifth-Class soils would be too poorly supplied with plant nutrients, too hilly or steep, or too subject to loss of topsoil and gullying to be suitable for purposes other than forestry and related uses.

Only a limited area of land within the county meets the requirements for a First-Class soil (table 1). However, the Second-Class soils occupy a fifth and the Third-Class soils two-fifths of its land area. Therefore, about 112,000 acres, or approximately 62 percent of the total land area of the county would be physically suited to crops. More than half the acreage that would be unadapted to crops would be suitable for pastures. Only about 31,000 acres, or less than a fifth of the land area, is made up of Fifth-Class or essentially nonagricultural soils.

Table 1.- Acreage and percentage of entire county and of sample in each physical land class suited or not suited to crops, Fluvanna County, Va.

Physical land class	Entire county		Sample			
			Final 1/		Field sheets 2/	
	Area	Percentage	Area	Percentage	Area	Percentage
	Acres	Pct.	Acres	Pct.	Acres	Pct.
Suited to crops:						
First	5,366	3	548	2	546	2
Second	36,716	20	4,345	22	4,340	22
Third	70,019	39	7,661	38	7,696	38
Total	112,101	62	12,554	62	12,582	62
Unsuited to crops:						
Fourth	38,296	21	4,258	21	5,434	27
Fifth	30,823	17	3,429	17	2,225	11
Made land	243	3/	0	0	0	0
Total	69,362	38	7,687	38	7,659	38
Total land area 4/	181,463	100	20,241	100	20,241	100

1/ As combined by soil type and phase.

2/ As mapped by soil type, slope, and erosion class.

3/ Less than 0.5 percent.

4/ The total land area of 181,463 acres in table 1 as obtained by the field survey of soils in 1945 is slightly greater than the land area of 180,480 acres in table 2 as reported by the Census of Agriculture. This difference of 983 acres probably resulted from differences in definition of land used in the field survey and in the census. It is not considered great enough to affect the results of the survey significantly.

Major Soil Associations

The soils of Fluvanna County were grouped into 19 major soil associations that are described in the Soil Survey report (color map 1). This map identifies the principal soils and shows their relative importance in each association. As thus outlined, it provides an index of the physical prospects for farming within these general areas. Some of the smaller areas include only a fraction of the acreage in most tracts. This is particularly true of those that extend along the streams and some of the narrower ridges. Otherwise, all of the more extensive areas shown contain a fairly large number of existing and potential farmsites.

The areas in which Nason or Tatum are the principal soils provide greater physical opportunities for farming than those in which Manteo soils largely prevail. Those areas in which Lloyd or Appling soils occupy more of the land provide a better physical setting for farming than the areas in which Bremo or Louisburg soils are chiefly represented.

A special tabulation was made to find the percentage distribution of the five physical land classes in each association (appendix table 27). It showed that the three associations in which the Nason and Tatum soils were found to be most extensive all contained a high ratio of land suited to crops. The same favorable ratio prevailed in the small area of the Goldvein-Nason-Worsham association mapped. Similarly, three-fourths or more of the area of six additional associations was found to be suited to crops. With local exceptions, these six associations were situated entirely outside the Nason-Tatum belt.

The three associations in which the Nason and Tatum soils are most extensive all contain a high ratio of land that would be suited to crops (appendix table 25). The same favorable ratio prevails in the small area of Goldvein-Nason-Worsham association. Similarly, three-fourths or more of the area of six additional associations would be suitable for cultivated crops. With minor exceptions, these six associations are located outside the Nason-Tatum belt.

All or nearly all of the remaining acreage in the preceding 10 associations would be physically suited to pasture. In contrast, a fairly high percentage of the areas in which Manteo and Louisburg are the principal soils would be suitable mainly for forest and related uses. That in which the Bremo soils occupied a high ratio of the sample areas contained only a small percentage of essentially nonagricultural land, but more than three-fifths would be suitable only for pasture.

Two-fifths or more of the area of the other 6 associations mapped would be suited to crops. Because of local variations in slope, drainage, and other physical conditions, some areas would be suitable mainly for pasture or forest uses.

MAJOR SOIL ASSOCIATIONS
FLUVANNA COUNTY, VA.

A. UNDERLAIN BY SCHIST

- ▨ 1. Nason-Tatum-Manteo
- ▨ 2. Tatum-Nason-Manteo
- ▨ 3. Nason-Manteo-Tatum
- ▨ 4. Manteo-Wehadkee-Worsham
- ▨ 5. Manteo-Tatum-Nason

B. UNDERLAIN BY QUARTZ MONZONITE

- ▨ 1. Goldvein-Nason-Worsham

C. UNDERLAIN BY GRANITE

- ▨ 1. Appling-Louisburg-Colfax
- ▨ 2. Appling-Cecil-Louisburg
- ▨ 3. Cecil-Appling-Louisburg
- ▨ 4. Appling gr-Louisburg-Colfax
- ▨ 5. Louisburg-Appling-Cecil

D. UNDERLAIN BY MIXED ROCK

- ▨ 1. Helena-Vance-Appling

E. UNDERLAIN BY QUARTZ MICA SCHIST

- ▨ 1. Madison-Louisa-Lloyd

F. UNDERLAIN BY HORNBLENDE GNEISS & SCHIST

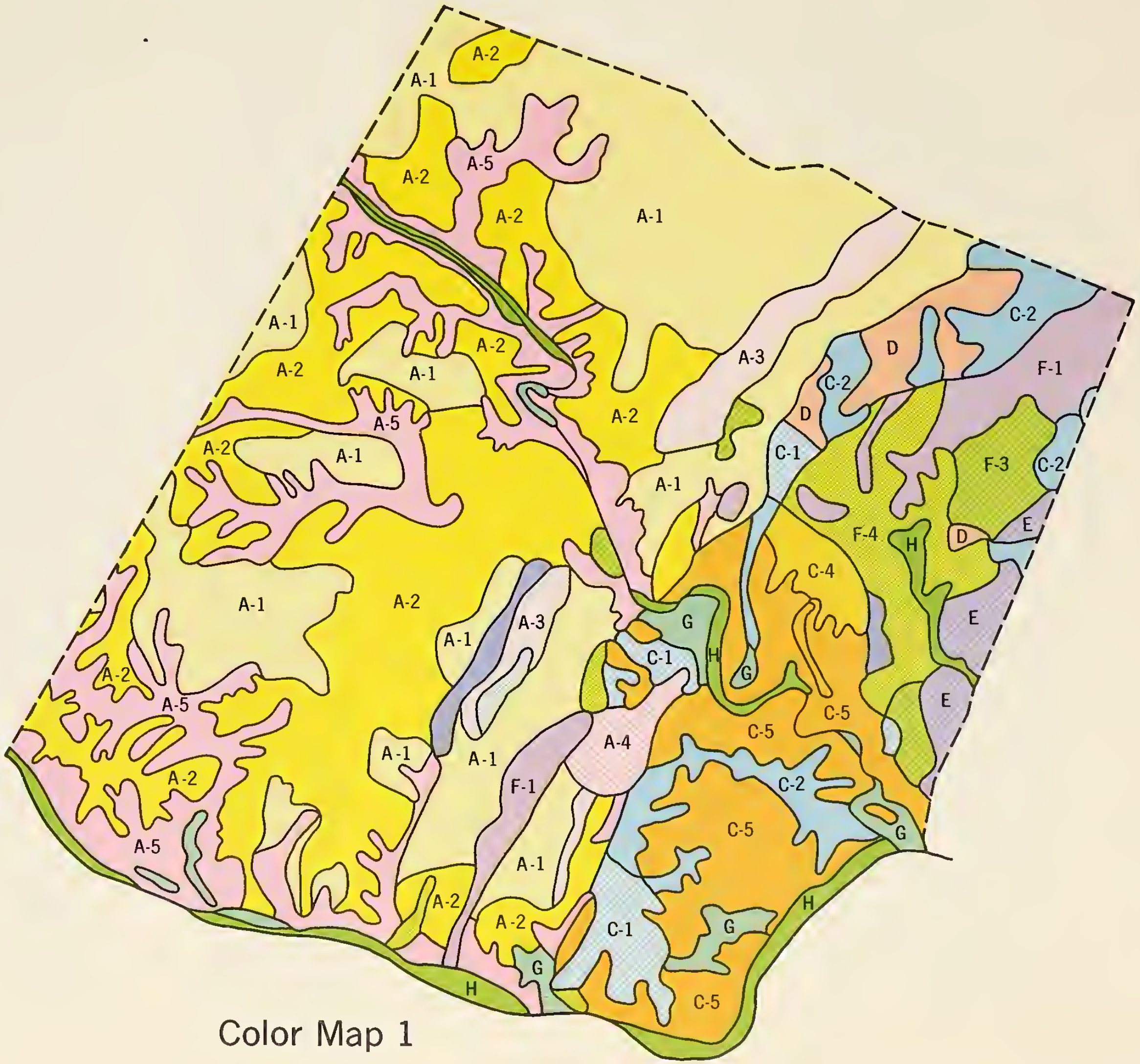
- ▨ 1. Lloyd-Fluvanna-Bremo
- ▨ 2. Orange-Fluvanna-Zion
- ▨ 3. Fluvanna-Lloyd-Bremo
- ▨ 4. Bremo-Orange-Fluvanna

G. UNDERLAIN BY OLD ALLUVIUM

- ▨ 1. Hiawassee-Masada-Wickham

H. UNDERLAIN BY NEW ALLUVIUM

- ▨ 1. Congaree-Mixed-Chewacla



Color Map 1

U.S. DEPARTMENT OF AGRICULTURE

Agricultural Research Service

THE LAND USE SITUATION

In 1944, only about a fourth of the land area of Fluvanna County was in cropland or open pasture that was reasonably free of woods or brush. Of the limited acreage actually used for harvested crops, nearly a fourth was land not physically suited to cropping. Even though more suitable land was available for pasture, about an eighth of the acreage pastured was on land best adapted to forests. The limited use for farming of such soils as Appling and Cecil pointed to economic and related factors, rather than major physical deficiencies, as the chief deterrents to more widespread development of farming.

Throughout the more than 200 years since settlement began in Fluvanna County, about 70 percent of the land area had been under cultivation. 3/ Only approximately a third of its area had been in cultivation at any one time. A much higher ratio of the land unsuited to crops had been cleared and used for that purpose than of the soils suitable for cultivation. At least part of the land that was classed as poor for crops had undergone two or more complete cycles of clearing, use for tobacco and other crops for a few seasons, and then abandonment. Although these old plantation centers ultimately became so badly washed and gullied that little farming had been attempted within the preceding century, in many parts of the county the same cycle has persisted.

Expansion of the cropland base to the level that prevailed at the peak attained about 1860 would more than double the acreage in 1944 and 1949. At that time the acreage in crops and other improved land contained a comparatively large proportion of poorly adapted soils. The same acreage of land that was then used for harvested crops could be supplied by developing only about half the total area suited to this purpose.

Land Use, 1944 and 1954

Compared with approximately 22,500 acres of cropland harvested in 1944, only about 17,000 acres were harvested 10 years later (table 2). Most of the acreage withdrawn from crops was shifted to pasture or allowed to revert to old field pine or brush. The acreage in pasture increased from about 31,500 to more than 36,000 acres. However, crop and other open land that was pastured declined by approximately 4,000 acres. Most of the increase of about 2,300 acres in land not in farms was in farm woodland in 1944 or had grown up in trees or brush since then.

The land in individual crops harvested declined from about 22,800 acres in 1944 to only slightly more than 19,000 acres in 1954 (appendix table 26). The acreage in intertilled crops declined by more than 2,500 acres or by about a third. The acreages in small grains that were threshed or combined were reduced by 1,400 acres, or again by nearly a third. The acreage in hay and forage crops was expanded only slightly, but the percentage increase was from less than half to nearly three-fifths of the acreage in all crops.

3/ For history of Fluvanna County and the Virginia Piedmont see 1, 2, 5, 7, 10, 12, 13 and 22.

Table 2.- Acreage and percentage of total land area in cropland and other uses, Fluvanna County, Va., 1944 and 1954

Land use	1944		1954 1/	
	Acres	Percent	Acres	Percent
Land in farms:				
Cropland harvested	22,541	13	17,365	10
Cropland pastured	6,088	3	8,070	4
Other cropland 2/	5,013	3	4,261	2
Other open pasture	18,577	10	13,536	7
Other open land 3/	4,137	2	2,264	2
Woodland pastured	6,882	4	14,674	8
Woodland not pastured	52,824	29	53,579	30
Total	116,062	64	113,749	63
Land not in farms	64,418	36	66,731	37
Total land area	180,480	100	180,480	100

1/ Preliminary.
2/ Cropland not harvested and not pastured.
3/ Land occupied by farmsteads, lanes, roads, ditches and waste.

U. S. Census of Agriculture (16).

In the 10-year period, the acreage of corn declined by about 2,000 acres. Acreages in tobacco, truck crops, and orchards and vineyards were also reduced. Between 1944 and 1954, there was a small increase in acreages of soybeans and other intertilled crops. The acreage of wheat was curtailed from about 3,600 to less than 1,700 acres. This decrease was only partly offset by increases in acreages of oats, barley, and mixed grains that were cut for hay or harvested for grain. Lespedeza cut for hay or seed declined by more than 3,000 acres. The acreage of alfalfa was expanded from about 200 to nearly 900 acres. Although acreages in clover and timothy increased slightly, most of the increases were in small grains saved for hay and in other hay and forage crops.

Uses and Classes of Land

Despite adoption of better soil-management and land-use practices, uses in 1944 were far from adjusted to capabilities of the land. Only 78 percent of the cropland was located on land suited only to cultivation (table 3 and fig. 4). Nearly 20 percent was on land suited to pastures and an additional 5 percent was on land that was suited chiefly to forests. About 12 percent

Table 3.- Distribution of sample area in various land uses and in each physical land class, Fluvanna County, Va., 1944

PERCENTAGE OF LAND USE

Land use	Sample area	Land class 1/					
		Suited to crops				Unsuited to crops	
		All	First	Second	Third	Fourth	Fifth
	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
Open land:							
Cropland:							
Crops harvested	100	77	9	22	46	18	5
Crop failure	100	79	38	4	37	19	2
Idle cropland 2/	100	84	3	27	54	11	5
Total	100	78	9	21	48	17	5
Pasture 3/	100	56	6	13	37	32	12
Idle land 4/	100	62	7	17	38	31	7
Other land 5/	100	91	0	42	49	6	3
All open land	100	69	7	19	43	23	8
Woodland:							
Brush:							
Pastured	100	44	4	12	28	37	19
Not pastured	100	64	2	15	47	26	10
Total	100	58	3	14	41	29	13
Forest:							
Pastured	100	47	2	23	22	39	14
Not pastured	100	61	1	23	37	27	12
Total	100	60	1	23	36	28	12
All woodland	100	60	1	22	37	28	12
Total sample	100	62	3	21	38	27	11

See footnotes at end of table.

- Continued

Table 3.- Distribution of sample area in various land uses and in each physical land class, Fluvanna County, Va., 1944 - Continued

PERCENTAGE OF LAND CLASS

Land use	Sample area	Land class 1/					
		Suited to crops				Unsuited to crops	
		All	First	Second	Third	Fourth	Fifth
	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
Open land:							
Cropland:							
Crops harvested	10	12	32	10	12	7	5
Crop failure	1	1	9	6/	1	0	6/
Idle cropland 2/	2	3	2	3	3	1	1
Total	13	16	43	13	16	8	6
Pasture 3/	9	8	19	5	8	10	9
Idle land 4/	2	2	6	2	2	3	2
Other land 5/	1	2	0	2	2	6/	6/
All open land	25	28	68	22	28	21	17
Woodland:							
Brush:							
Pastured	1	1	2	1	1	2	2
Not pastured	2	2	2	1	3	2	2
Total	3	3	4	2	4	4	4
Forest:							
Pastured	4	3	3	4	2	6	5
Not pastured	68	66	25	72	66	69	74
Total	72	69	28	76	68	75	79
All woodland	75	72	32	78	72	79	83
Total sample	100	100	100	100	100	100	100

1/ As mapped by soil type, slope and erosion class. (See table 1.)

2/ Not used for harvested crops or cut for hay in 1944.

3/ Mostly unimproved but fairly free of field pine or brush.

4/ Land not in crops or cut for hay since 1942 or before.

5/ Land occupied by dwellings, churches, schools, other buildings, gardens and home orchards.

6/ Less than 0.5 percent.

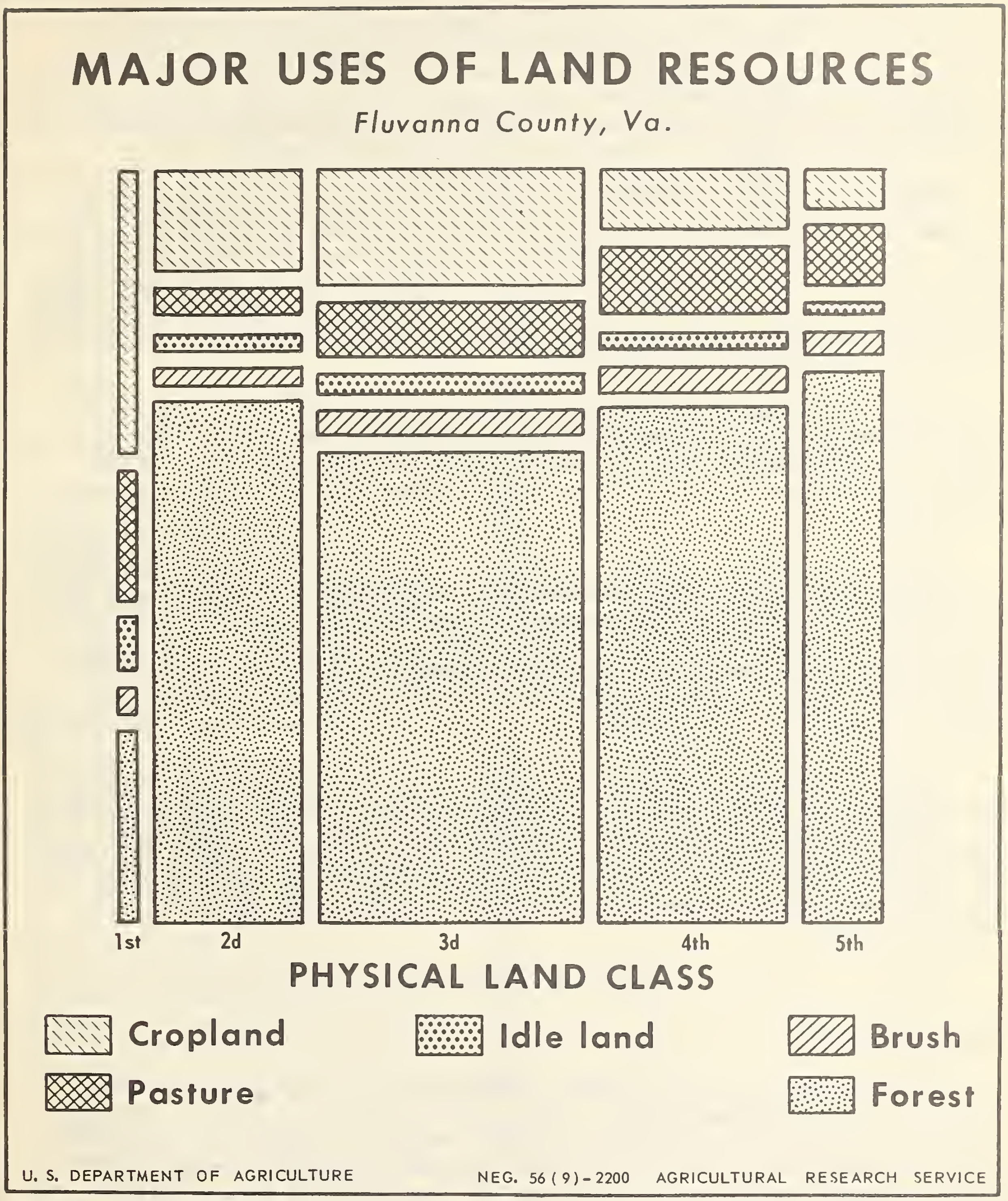


Figure 4.- About three-fourths of the land area of Fluvanna County was in forest and brush in 1944 and there was little relationship between existing uses and resource capabilities.

of the pasture was on land unsuited to either crops or pastures. In contrast, nearly 60 percent of the woodland was on land potentially suited to cultivated crops and another 28 percent was on land that was at least suited to pastures. More than half the cropland lying idle or used only for soil-improvement crops was concentrated on Third-Class soils. Only 7 percent was located on Fifth-Class, or essentially nonagricultural soils.

More than 70 percent of the land physically suited to cultivation was in woodland. Less than half of the area of First-Class soils was in cropland. Only 10 percent of the acreage of Second-Class soils and 12 percent of the acreage of Third-Class soils were in harvested crops. Although crops were harvested from less than 10 percent of the area of either Fourth-Class or Fifth-Class soils, the percentage was about half as great as that on land suited to cultivation.

About two-thirds of the sample acreage in open pastures in 1944 consisted of nearly equal ratios of Third- and Fourth-Class soils. The percentage of Second-Class soils in pastures was exceptionally low. Fifth-Class soils exceeded the percentage of both these and the Third-Class soils in this use.

Most of the sample acreage classed as idle land consisted of the former crop and pasture fields found on abandoned properties or on vacant and unoccupied units. The chief distinction between this and the idle cropland was in the more advanced stage to which reversion had already progressed on the idle land. At that time, the idle cropland could readily have been replowed for a crop. Referming the idle land would have necessitated such additional work as pulling young pine trees or cutting brush and other growth.

Aside from the First-Class soils, there was little variation in the percentage of the land classes in woodland in 1944. The 72 percent shown for the Third-Class soils was only slightly lower than that on the next higher land class. The ratio of the Second-Class soils in forest and brush was about the same as that of the Fourth-Class soils. It was also only slightly lower than the percentage in forest and brush of the soils best suited to forest.

Land Use and Soils

First-Class Soils

The Congaree soils occupy about three-fourths of the area of First-Class soils, both throughout the county and in the sample areas. They are situated at fairly low elevations and near the main channels of the James and Rivanna Rivers and the other larger streams. For this reason, the flood hazard probably accounted, at least partly, for the fact that a third of the First-Class soils were in forest and brush in 1944 (table 4). The James River bottoms were found to contain a greater ratio of cropland than those that border the Rivanna River and other streams. But there were fairly extended stretches even along the main river, and notably among the Seven Islands, where a sizable acreage was idle or in brush and trees.

Table 4.- Percentage of principal soil types and phases in sample area, in cropland and other uses, Fluvanna County, Va., 1944 1/

Soil type and phase 2/	Sample area	Percentage distribution		
		Cropland 3/	Other open land 4/	Woodland 5/
	Acres	Percent	Percent	Percent
First-Class:				
Congaree silt loam	247	46	32	22
Congaree fine sandy loam	185		14	47
All other	116	39	30	28
Total	548	42	26	32
Second-Class:				
Lloyd silt loam (up)	202	10	5	85
Tatum silt loam (up)	3,038	13	6	81
Fluvanna silt loam (up)	239	13	14	73
Appling, fine sandy loam (up)	494	20	5	75
All other	372	28	17	55
Total	4,345	15	7	78
Third-Class:				
Appling sandy loam (up)	334	24	5	71
Nason silt loam (up)	1,840	23	12	66
Tatum silty clay loam (up)	245	37	25	38
Tatum silt loam (rp)	153	14	21	65
Nason loam (up)	518	11	7	82
Appling fine sandy loam (rp)	242	10	8	82
Nason silt loam (rp)	1,963	13	10	77
Nason loam (rp)	170	5	8	87
Lignum silt loam (up)	178	15	16	69
Helena fine sandy loam (up)	203	19	11	70
Orange silt loam (up)	305	5	4	91
Manteo silt loam (up)	414	6	2	92
All other	1,096	22	15	63
Total	7,661	17	11	72

- Continued

Table 4.- Percentage of principal soil types and phases in sample area, in cropland and other uses, Fluvanna County, Va., 1944 1/ - Continued

Soil type and phase 2/	Sample area	Percentage of distribution		
		Cropland 3/	Other open land 4/	Woodland 5/
	Acres	Percent	Percent	Percent
Fourth-Class:				
Mixed alluvium, well drained---	200	6	13	81
Worsham silt loam--------------	446	7	11	82
Worsham sandy loam-------------	232	7	6	87
Mixed alluvium, poorly drained-	507	5	10	85
Bremo silt loam (rp)-----------	189	11	5	84
Louisburg sandy loam (rhp's)---	450	8	7	85
Manteo silt loam (rp)----------	1,230	9	13	78
All other----------------------	1,004	16	23	61
Total--------------------------	4,258	9	14	77
Fifth-Class:				
Louisburg sandy loam (erhp's)--	407	9	5	86
Wilkes sandy loam (hsp's)------	275	8	5	87
Louisburg sandy loam (esp)-----	278	2	4	94
Manteo silt loam (hp)----------	1,799	7	15	78
Manteo silt loam (sp)----------	601	1	4	95
All other----------------------	69	6	29	65
Total--------------------------	3,429	6	11	83
Total all classes----------	20,241	14	11	75

1/ Soil types and phases represented in sample by 150 acres or more arrayed within physical land classes.

2/ The symbols in parentheses after soil names define phases as follows: (up) undulating; (rp) rolling; (hp) hilly; (sp) steep; (rhp's) rolling and hilly; (hsp's) hilly and steep; (erp) eroded rolling; (erhp's) eroded rolling and hilly; and (esp) eroded steep.

3/ Includes minor acreages occupied by farmsteads, and miscellaneous uses.

4/ Pasture and idle land.

5/ Forest and brush.

Second-Class Soils

Less than a fourth of the acreage of Second-Class soils was in crop and other agricultural uses in 1944. Only about 13 percent of the undulating phase of Tatum silt loam was in cropland or in farmsteads and similar uses. The percentage of Fluvanna silt loam in cropland was about the same, although that in pasture and idle land was higher. Even on less extensive or minor soils in this class, only 28 percent was in cropland or other intensive uses and only 17 percent was in other open land.

Third-Class Soils

Only about 28 percent of the area of Third-Class soils was in agricultural use in 1944. Of the more important soils in this class, a third or more was in crop and other open land only on undulating phases of Tatum silty clay loam and Nason silt loam and on the rolling phase of Tatum silt loam. The percentage of acreage in woodland was relatively high on Nason loams and on the rolling phase of Appling fine sandy loam. It exceeded 90 percent on Orange and Manteo silt loams.

Fourth-Class Soils

The 1944 uses made of minor or less extensive soils in this class differed very little from those of many of Second-Class and Third-Class soils. On 7 soil types and phases listed separately, the proportion in crop, pasture, and other open land ranged from only 13 percent of Worsham sandy loam to 22 percent of the undulating phase of Manteo silt loam.

Fifth-Class Soils

About 15 percent of the acreage of the poorly situated and often severely eroded Louisburg, Wilkes, and Manteo soils remained in crop and other open land in 1944. Even though small, compared with that in woodland, this ratio equaled those found on many soils suited either to crops or to pasture.

Nason-Tatum Soils

Uses made of the Nason, Tatum, and associated soils did not differ significantly from those of other soils (table 5). A somewhat smaller ratio of Tatum silt loam was in either cropland or pasture than of the remaining Second-Class soils. The percentage of Nason soils in these uses was almost the same as that of other Third-Class soils used for these purposes.

Nason, Tatum, and associated soils occupy about 60 percent of the area of the sample (appendix table 27). They were also found to be low in natural fertility and in organic matter. However, data compiled from the sample showed that approximately 80 percent of the total area of these soils was on land that ranged from undulating to rolling. Except for minor acreages of more strongly rolling to steep land that had previously been placed under cultivation, they had not been subjected to appreciable erosion.

Table 5.- Percentage of principal soils and various slope and erosion classes in cropland and other uses, sample areas, Fluvanna County, Va., 1944

Designation	Sample area	Percentage in use				
		Cropland 1/	Pasture	Idle	Brush	Forest
	Acres	Pct.	Pct.	Pct.	Pct.	Pct.
Land class: 2/						
All First-Class	546	43	19	6	4	28
Tatum silt loam	3,038	13	4	2	2	19
Other Second-Class	1,302	19	9	1	3	68
Nason silt loam and loam	4,519	17	8	3	3	69
Other Third-Class	3,177	18	9	2	4	67
Manteo silt loam	4,044	6	9	3	3	79
Other Fourth-Class and Fifth-Class	3,615	9	11	2	5	73
Total	20,241	14	8	2	4	72
Slope class:						
Level	1,448	19	15	5	5	56
Undulating	9,768	16	6	3	4	71
Rolling	5,073	12	9	3	3	73
Hilly	2,936	7	12	3	4	74
Steep	1,016	2	5	3/	3	90
Total	20,241	14	8	2	4	72
Erosion class:						
Alluvial and colluvial deposits	2,400	17	12	3	6	62
No apparent erosion	6,219	3	1	1	1	94
Slight erosion	9,581	20	11	3	4	62
Moderate erosion	707	34	20	6	9	31
Severe erosion	1,334	7	9	2	6	76
Total	20,241	14	8	2	4	72

1/ Includes acreage occupied by farmsteads and miscellaneous uses.
2/ As mapped by soil type, slope, and erosion class. (See table 1.)
3/ Less than 0.5 percent.

The detailed analysis made of the other characteristics of these well-situated but poor soils revealed no structural or similar defects that would seriously affect their development for use with modern methods of farming.

An experiment conducted by the Piedmont Field Station on Tatum silt loam near Orange, Va., showed that crops responded readily to phosphate fertilizers (20, p. 25). Application of phosphorus to grass-legume mixtures on Nason silt loam produced an excellent stand and yield. No response or only a light response resulted in either instance from application of potash. This had been expected, as it had been found through previous analysis that these soils were relatively well supplied with this plant nutrient. The application of 2 tons per acre of agricultural limestone produced about a one-third increase in yield from orchard grass-ladino clover pasture mixture. Although the ladino clover was seriously injured by the unusually dry weather in 1951 and 1952, applications of 800 to 1,100 pounds of mixed fertilizer annually maintained excellent stands of grass-ladino clover mixtures. When only 200 pounds per acre were applied annually, yields were low and the stand of ladino clover was almost completely lost.

Slope and Erosion

Much of the area in the sample ranged from nearly level to rolling in relief (appendix table 28). More than half was on slopes of less than 2 to about 10 percent. An additional fourth was classed as rolling (slopes of 10 to 16 percent). Of the rest, only about a fourth occupied slopes of 30 percent or greater.

No more than a limited adjustment of land use to slope conditions was evident in 1944 (table 5). The percentage of the sample area classified as cropland ranged from about 20 percent on level land (less than 2-percent slope) to approximately 2 percent on steep land (slopes of 30-percent or greater). Only a very small part of the extensive acreage of undulating and rolling lands was used for either cropland or pasture. As these lands occupy about 75 percent of the land area, much of the county, if cleared, could be farmed readily with tractor-drawn equipment. Conservation of the soil would be fairly easy also. Yet, a total of only about 20 percent of such land was in these uses. In contrast, a higher ratio of the hilly land was used for pasture and only a slightly smaller proportion for crops. Despite the fact that most of the steep land had been restored to forests, about 5 percent still remained in crops and pasture in 1944.

Nearly 80 percent of the sample acreage had been subjected to no erosion or to only slight erosion (appendix tables 27 and 29). An additional 12 percent consisted of recent deposits of materials by local streams or of outwash from the slopes. Only 10 percent had been moderately to severely eroded under previous cultivation.

Only about a third of the large acreage of well-situated land that had been subjected to slight erosion was in crops and pastures in 1944. About 25 percent of the very poorly situated land subjected to severe erosion under protracted use for crops remained open or was in brush. Much of the most favorably situated land--that on the broader ridges occupied by the Nason, Tatum, and other soils--apparently had always remained in forest or had been farmed very lightly.

During the 10 to 15 years preceding the survey, considerable acreages of both the moderately and severely eroded land had been shifted from cultivation. Most of the eroded land used for pasture previously had been in crops, as had that lying idle or in brush. Unless this pasture and idle land has since been replowed or recleared, it should have reverted to forest or brush.

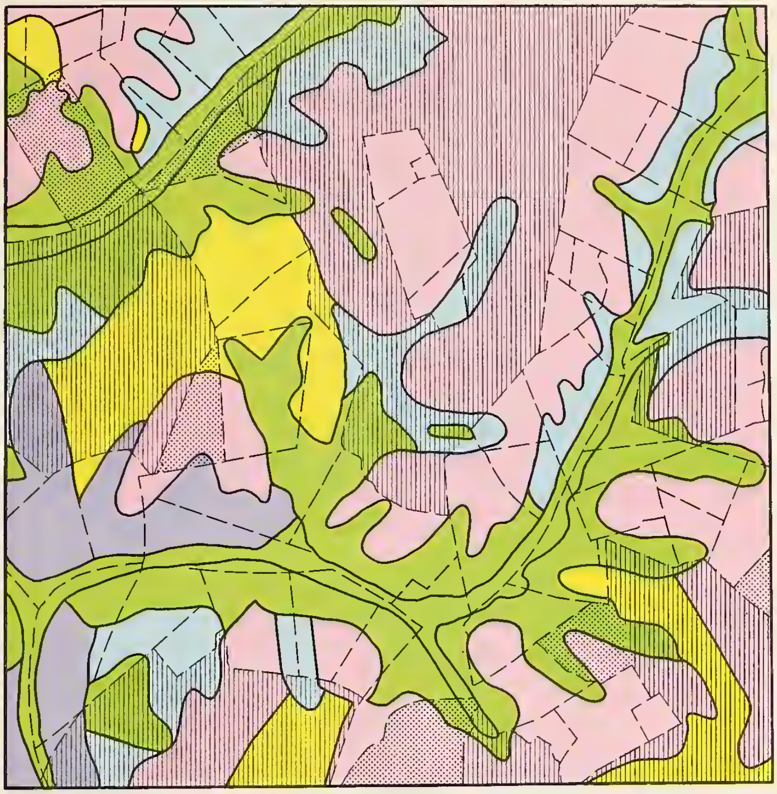
Layout of Fields

Crop and other fields were limited in number and spotty in distribution throughout most of Fluvanna County in 1944. Even within the more completely developed localities in the county, they were relatively small, and they seldom conformed to the configuration of the land. The small size and poor location of the crop and other fields typical of the pattern in most of the county are shown in color map 2. Most of the existing fields were irregular but fairly square in outline. The longer fields extended across rather than parallel to the contour of the land. Consequently, different phases of the same soil or of two or more soil types frequently were included, and more than one physical land class was represented in a single field. Very often one side of a field followed the course of a drainageway, while the opposite side extended along the public road or access lane that traversed the center of the ridge. In turn, the connecting fences typically extended from a corner in or near the watercourse, up the slope, and across a part of the ridge to the corner at the other end of the field.

This arrangement of fields so frequently found during the field survey may have resulted partly from the many instances in which property lines had remained oriented to the local drainage channels. It is equally possible that it stemmed from enlargement of the acre or two initially cleared for tobacco along many of the slopes. The more thoroughly drained and aerated soils on the slopes were usually selected for tobacco. As early as colonial times, wheat had proved to be a money crop second only to tobacco. It was the crop chosen by many farmers in periods of overproduction and low prices for tobacco. Apparently here and elsewhere in that part of the James River Basin that lies within the Piedmont, yields of wheat were reasonably satisfactory on patches previously exhausted for tobacco (7, p. 68). Cutting or grubbing out the tree growth on fields abandoned for a longer period helped to enlarge typical tobacco fields. Frequently, some new ground was cleared next to the ridges to add to the area available for wheat and other crops.

With this precedent, there is reason to believe that much of this same process of field enlargement and shift in crops had occurred in the preceding 50 years. As the acreage in tobacco was reduced or the crop eliminated entirely, many farmers shifted to wheat and other crops and increased the number of milk cows or beef cattle maintained (appendix tables 30 and 31). Again this often resulted in the clearing of such land as remained along the

LAYOUT OF FIELDS IN SELECTED AREA
FLUVANNA COUNTY, VA.



One Square Mile

LAND USE, 1944

☐ Crop and other open fields

▒ Reverted to forest or brush

▥ Always in forest

SOILS AND LAND CLASS

SECOND CLASS SOILS

🟨

THIRD CLASS SOILS

🟥 Undulating phases

🟦 Rolling phases

FOURTH CLASS SOILS

🟩

FIFTH CLASS SOILS

🟪

Color Map 2

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Agricultural Research Service
R-486

slopes, together with the addition of parts of the Nason and other soils on the smoother and broader ridges.

Certain economic factors were involved in delaying extension of the cleared acreage to all of the area in these better situated soils. Compared with pulling small pines to restore an abandoned field to cultivation, removing oak and other hardwood stumps from a tract previously in virgin timber was more difficult. Until recently, yields for corn and other crops were disappointingly low. As good grass mixtures were unavailable, yields of hay and pasture-carrying capacities continued to be low. Few farmers were able to accumulate sufficient capital to diversify or enlarge their operations. Most bankers and other investors were reluctant to lend the necessary funds to farmers in an area where farming had often ended in failure.

Whatever the reasons, the incomplete development of these soils on the smoother and wider ridges is a major deterrent to the establishment of more widespread and permanent farming. Without a comprehensive redesign of fields to center farming operations on these soils, modern farm machinery cannot be utilized to maximum advantage. Nor can the land be adequately protected from washing and gullying. It would be possible simply to shift from crops those parts of existing fields that are too hilly, steep, or badly eroded to remain under cultivation. However, this would reduce the acreage of cropland available, make operation of the smaller fields less economical, and add to the costs of the contour farming needed for protection of the more rolling land.

Crops and Cropping Practices

Thomas Jefferson and James Madison, two of Fluvanna County's illustrious neighbors of about a century and a half ago, repeatedly urged that such amendments as gypsum, ashes, ground bone, lime, and marl be applied (2). They advocated such other improvements in crop husbandry as that of removing impoverished land from cultivation, use of planned crop rotations, and adoption of contour farming. In addition to application of manures, they recommended that wheat straw and corn and tobacco stalks be restored to the soil.

In 1944, lack of these and other good farming practices continued to result in reduced yields and curtailed returns on many farms. Treatments varied greatly, but in general the quantities of fertilizer applied were inadequate for good corn, wheat, and other crops. Most local farmers were only beginning to realize the benefits to be gained from the application of ground limestone. Only a few operators had laid out their crop fields in contour strips, provided meadow or other vegetated outlets for water disposal, or planted protective cover on badly gullied, steep, or worn-out spots.

On farms where combines and cornpickers had been introduced, straw and stalks were frequently left in the field. Thus, some of the plant nutrients removed by the crop were retained. In contrast, where straw and fodder were removed for forage, bedding or for sale, little crop or animal residue was returned to strengthen the land. An increasing number of farmers were plowing under such legumes as lespedeza and soybeans. This practice, however, was applied on too few acres, notably on Nason, Tatum, and other upland soils on which the addition of organic matter was most needed.

In an effort to adjust to slope and other adverse physical features, frequently only parts of fields were plowed and seeded in crops. This practice of restricting farming to small patches promoted encroachment of pine and brush. Usually, it was necessary to abandon the entire field in a few years.

The need for good practices in managing Nason, Tatum, and other Second- and Third-Class soils was further underscored by such yield data as were compiled from the sample. On fields that had received ample amounts of fertilizer and lime, and on which similar practices were applied, yields were usually above the State average for the crop. When little or no fertilizer or lime was applied on the same kind of land, yields often little more than justified the costs of harvest.

Improved and Other Pastures

On most pastures observed in 1945 and again in 1950, 2 or 3 acres or more were required to carry each head of livestock. Even when carrying capacities were relatively high, it was usually necessary to provide supplemental pasture in late summer and fall. Ordinarily, this was done either by turning stock into meadows after the last cutting of hay or into a field after corn had been husked.

Only a third of the 1944 acreage in open pasture was improved. In few instances were fields kept permanently in pasture and rebroken only as frequently as was required to restore the sod and to prevent growth of scrub pines, briars, hardwood sprouts, and weeds. More frequently, these better pastures represented fields on which cultivated crops were succeeded by one or more years each of hay and then of pasture.

The remaining two-thirds or more of the area in nonwooded pastures consisted chiefly of fields relegated to pasture for various reasons. In many instances, it had been necessary to pull the field pine or cut the hardwood growth in order to increase the forage available. Often in the first stage of abandonment, these fields would have been completely overrun unless replowed for crops in the next few years or other measures taken to check reversion. Particularly where stumps of the young hardwoods had not been removed, the ensuing growth of sprouts, if not since eliminated, would greatly have impaired their value for reforestation as well as for pasture.

Almost two-fifths of the total acreage pastured comprised land in either brush or trees. Many of the old abandoned fields thus pastured were practically devoid of palatable vegetation. Those already heavily infested with young pines or hardwood brush and completely wooded tracts provide even less subsistence for livestock.

At that time, only a limited acreage of permanent pasture was receiving fertilizer and lime at regular intervals. Many fields on which crops were rotated with pastures were limed when seeded to grass. Because the quantities of fertilizer applied to the preceding crops were usually inadequate, little if any residual value was left to stimulate the subsequent growth of either meadows or pastures.

In the period since 1950, particularly, quite a few farmers have developed improved pastures for their dairy or beef cattle herds. Carrying capacities were greatly lowered by an unusual series of years of dry weather from 1951 through 1954. This was especially true of land on which moisture-retaining properties were low or had been impaired by erosion. Declining prices for beef cattle have been an equally discouraging factor. Despite these adversities, however, acreage of improved pastures as well as that in hay and forage crops has been greatly increased in the last 5 years on many of the more actively operated farms.

Forest Growth and Utilization

Its forests have provided and should continue to provide an important source of employment and income to the people of Fluvanna County. In 1940, about 132,000 acres, or nearly three-fourths of the total land area, were in commercial forests (8, p. 12). The net volume in sound trees of 5 inches or greater was 10.6 cords per acre, or about the same as among all forests in Virginia. Since then there has been an increase in the forested area. Because of widespread cutting in the last 15 years, the present volume of sawtimber per acre may be somewhat lower.

Even if agricultural potentials were to be fully realized, a considerable acreage would be too steep, too badly eroded, or otherwise too poorly adapted to warrant its development and maintenance in crops or pasture. In addition, many small areas would be physically suited to crops or pasture, but they would be too limited in extent or so inaccessible as to be uneconomical to farm.

An expanded development of the agricultural resources of Fluvanna County need not necessarily result in a comparable decline in the volume and quality of the output of forest products. The Nason, Tatum, and other favorably situated upland soils offer fairly good opportunities for farming, but they would be inferior for the growing of timber. The rate of growth observed on these soils was slow and individual trees tended to be stocky and limby. Center and crown rot were commonly found among oak and other hardwoods of saw-log dimensions. On abandoned fields, stands of scrub pine were more numerous than those of the more valuable shortleaf.

Unpublished data of measurements on plots of pine showed an average height of approximately 90 feet on soils underlain by granites. On soils like the Nason and Tatum, trees of the same age had attained a height of only about 60 feet. Observations made while the field survey was in progress generally confirmed this sharp differential in rates of growth on the two groups of soils. For example, on an old tobacco patch known to have been last cultivated about 1905, pines were found on Appling fine sandy loam which had attained diameters of 18 inches by 1945. This meant that the average annual increment during the preceding 40 years had been about one-half of an inch. On another property, mainly on Louisburg soils managed as part of a combination farm and timber-growing unit, pine and poplar were growing about three-eighths of an inch each year. Compared with this rate, stumps were found on some of the "gray" land in the vicinity with as many as 20 growth rings to the inch, evidence of an annual increment of less than one-sixteenth of an inch.

Whether spread from an abandoned property or set by lightning or by a burning match or cigarette, fires were found to lengthen greatly the period of time required for the next timber crop. Although improvements in organized fire protection had helped to reduce the acreage burned, effective control was difficult to maintain, especially in dry seasons.

Many tracts of field pine were in evidence on the aerial photographs made in December 1936 for Fluvanna and adjoining counties in the James River Basin. Some of the fields taken over by pine had been under cultivation as late as 1920. Practically all of these stands had many trees that had attained saw-log dimensions between then and the time the field survey was made in 1945. By 1950, because of the greatly increased demand for lumber and other timber products, all or nearly all of these stands of pine had been cut over.

Most stands were so severely overcut that the hardwood understory was taking over nearly all tracts. Thus, when the next timber crop is available, it will be predominantly of hardwoods and frequently of the less desirable species. As fewer fields were abandoned than before 1930, less replenishment of pine occurred.

In 1944 and 1945, many farmers were getting a supplemental income of from $100 to $500 or more annually from the sale of crossties and pulpwood. Several of those visited did their own cutting and hauling. This usually doubled the prices received for ties, which sold at stumpage rates of approximately 50 cents. Pulpwood was selling at about $15 a cord, delivered to the nearest railroad siding, compared with $5 or less when sold on the stump. In some instances, these off-season activities afforded sufficient income not only to pay for a place and meet the expenses of clearing, but to renovate or add a dwelling and accessory buildings.

By 1945 a number of the landholders in Fluvanna and neighboring counties had acquired extensive acreages that were utilized chiefly to grow timber on a sustained-yield basis. Through selective cutting and other inexpensive forest-management practices, those visited felt that net returns from the sale of crossties and other sawtimber from more favorable soil areas should average about a dollar per acre annually. They anticipated that the sale of pulpwood would meet taxes and other miscellaneous expenses. According to their estimates, comparable stands on the poorer timber soils would do well to return more than half this amount annually.

Past Land Use

Partial development and lack of stability were the outstanding characteristics of the past history of land utilization in Fluvanna County. Even about 1860, when an unprecedented acreage of tobacco and other crops was planted, crops were harvested from only about a third of the area of the county (table 6; fig. 5). At that time, the extension of tobacco culture had resulted in the clearing of most of the hilly and steep slopes that bordered the James River and its major tributaries. Very often it marked the last effort made to wrest another crop of tobacco from the many fields which by then had become eroded and gullied almost beyond redemption.

Particularly from about 1880 to 1920, repeated attempts were made to establish farming on the Nason, Tatum, and other soils that previously had remained in almost unbroken forest. These widespread efforts to develop more farms and more farmland did not result in reestablishing even this relatively low level of farming activity. Maintained at about 30,000 acres until approximately 1920, by 1950 the acreage in harvested crops had been reduced to less than 20,000 acres.

This past economy failed to provide a basis for the development of a permanent and widespread agriculture. The dark tobacco grown was subject to intense competition; it commanded uncertain but usually low prices and was largely exported. Nevertheless, acreage and production of tobacco were fairly well maintained until the early twenties. During World War I, many farmers expanded their output of the dark tobacco crop, inventories accumulated, and consumption of bright yellow smoking tobaccos increased. As a result, prices dropped for dark tobacco and many people, particularly those of the younger generation, sought employment elsewhere. Many farms were abandoned outright. An even greater number were progressively enveloped by old field pine, as their operators, who were growing old and who lacked help, were forced to curtail their scale of farming. Market and price prospects for other crops were no better. Lack of good meadows and pastures limited opportunities to raise beef cattle or to maintain dairy herds.

It was not until the 1930's that there were positive signs that a new agriculture might be in the making in this area where past experience had been so unfavorable. The introduction of lespedeza enabled farmers to harvest a crop of hay or seed or to pasture their livestock on the same field from which a crop of wheat had been harvested earlier in the summer. Application of lime to many pastures as well as to crop fields greatly increased the quantity of forage available. Shifting to tractor-drawn equipment made it possible to cope more successfully with the shortage of family and other labor. Some farmers converted their crop fields to production of winter forage and summer pasture for an expanded herd of beef cattle. Others bought one or more idle or abandoned farms and brushed off the old crop and pasture fields preparatory to farming.

Land Abandonment

A long-term rotation of crops with trees apparently persists in this and in other areas where stands of ready-seeding pines contribute to the rapid

Table 6.- Major uses of land, Fluvanna County, Va., census years, 1850-1950

Land use	1850	1860	1870	1880	1890	1900	1910	1920	1930	1940	1950
	1,000 acres	1,000 acres	1,000 acres	1,000 acres	1,000 acres	1,000 acres	1,000 acres	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Land in farms:											
Crops harvested	38	53	34	30	28	30	26	28	21	21	17
Other improved land 1/	23	36	31	26	33	44	38	30	27	21	18
Other open land 2/	15	8	21	21	16	14	13	14	4	12	14
Farm woodland	65	61	58	64	58	63	75	80	75	66	64
Total land in farms	141	158	144	141	135	151	152	152	127	120	113
Land not in farms 3/	39	22	36	39	45	29	28	28	53	60	67
Total land area	180	180	180	180	180	180	180	180	180	180	180
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Farms	454	571	771	851	896	1,329	1,438	1,419	1,109	1,157	889
	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres
Average size of farm	312	278	186	165	151	114	105	107	115	104	128
Improved land per farm	135	155	84	66	69	56	44	41	43	36	40

1/ Includes idle cropland, improved pasture, and the minor acreage occupied by buildings, gardens and roads.

2/ Mainly idle cropland and unimproved but fairly open pasture.

3/ Largely in forest tracts but including some idle or abandoned farms, rural residences, townsites, and railway rights-of-way.

Figures are chiefly estimates based on the decennial census (16).

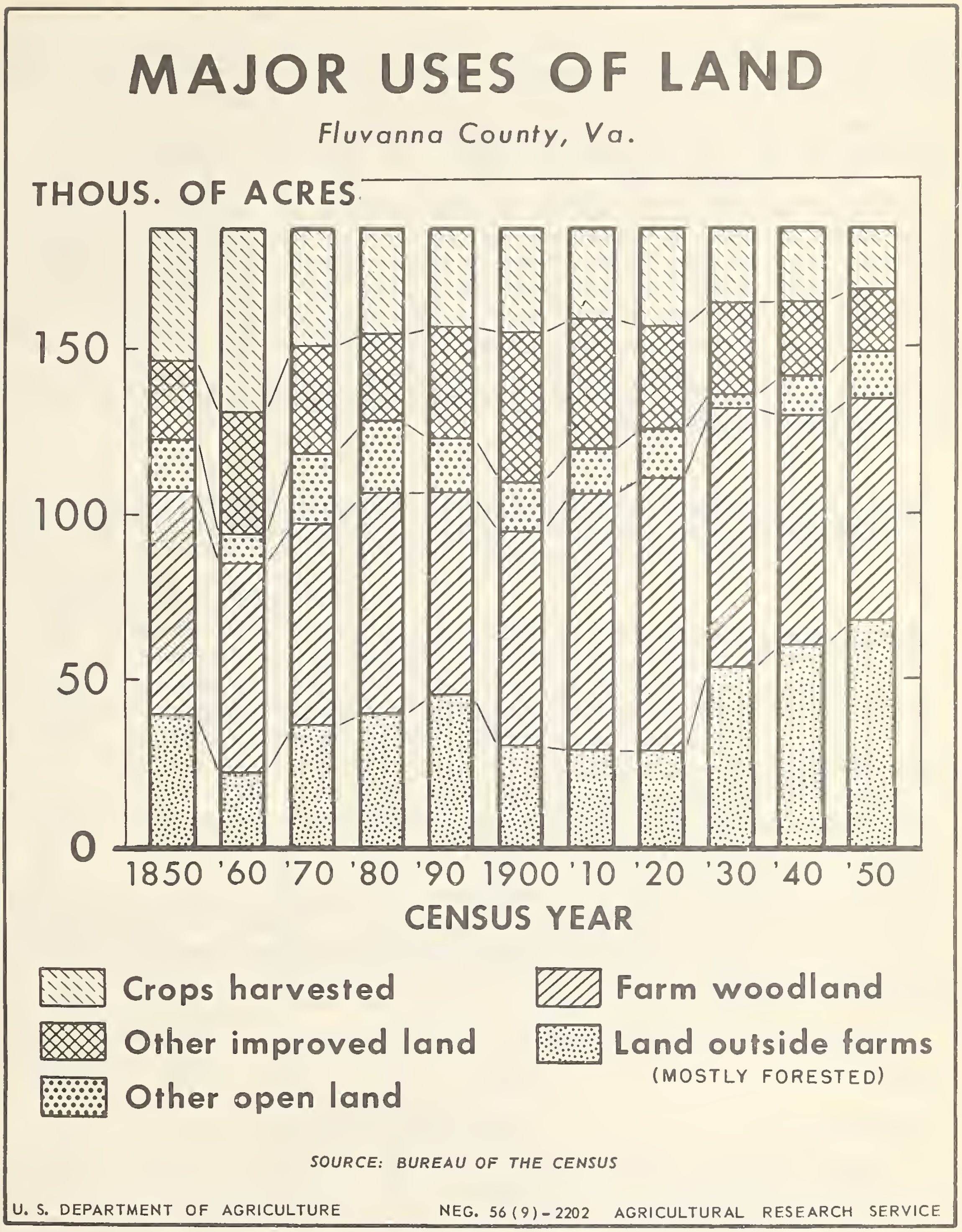

Figure 5.- A larger acreage probably was farmed about 1860 than during any other period in the history of the county. Attempts to establish farming in areas that previously had remained largely in forest resulted in a temporary expansion about 1900. Widespread abandonment during the next 30 years was reflected in a decline of approximately 40 percent in the acreage of open land.

envelopment of fields once farming is discontinued. The history of this perennial cycle of clearing, cropping, and reversion to old field pine traces back to a time shortly after the first planters arrived. For the first 150 years after settlement, land use followed much the same pattern as that established earlier in colonial Virginia. The land was cleared or recleared and planted to tobacco for 3 or 4 seasons. This was sometimes followed by a few more years in corn, wheat, or other crops. It then was "turned out" to be added to what was described in 1860 as the ever-widening "domain of old field" (5, p. 20). Most of these former tobacco fields were centered on Fifth-Class soils. At the time the survey was made, they had been under some type of tree cover for as much as 100 years or more (table 7). Meanwhile, tobacco growing was shifted to other parts of the county where ultimately it became of minor economic importance. By 1945, individual farms or other properties appeared also to have supplanted separate fields as the abandonment unit in the cycle.

Table 7.- Percentage of each physical land class open, abandoned, or apparently never in crops, sample area, Fluvanna County, Va., 1944

Physical land class 1/	Sample area	Percentage in use status				
		Open land	Formerly in crops			Never in crops
			All	After 1930	Before 1930	
	Acres	Pct.	Pct.	Pct.	Pct.	Pct.
Suited to crops:						
First	546	68	31	5	26	1
Second	4,340	22	39	3	36	39
Third	7,696	28	37	5	32	35
Total	12,582	28	38	5	33	34
Unsuited to crops:						
Fourth	5,434	21	54	6	48	25
Fifth	2,225	17	73	5	68	10
Total	7,659	20	59	5	54	21
Total sample	20,241	25	46	5	41	29

1/ As mapped by soil type, slope, and erosion class. (See table 1.)

"Worn-out land" was mentioned about as frequently by the farmers visited during the survey as "poor land" was given as the reason for abandonment. As farming had proved to be only fairly renumerative at best, it is not surprising that "neglect," "other work" and "lack of interest" were also numbered among the explanations for abandonment mentioned most often by local farmers. In many instances, lack of help was the immediate reason why farmers had permitted part of their fields to grow up or had quit farming entirely. This situation in turn stemmed from unattractive prospects for farming so that many young people were leaving home for other employment while they were still in their teens (appendix table 32). Left alone in their old age, many elderly farmers were unable to find tenants or wage workers, particularly when the farm was not located on an improved road. As a result, pine and brush soon covered all or most of the former cleared area.

Apparently land that was never cleared and in crops made up a smaller percentage of Fourth- and Fifth-Class soils than of any other except First-Class soils. Seemingly, nearly two-fifths of the acreage in Second-Class soils was never cleared and used for cultivated crops. In contrast, all except about 10 percent of Fifth-Class soils apparently had been cleared and used at one time or another for tobacco and other crops. The percentage of the acreages of each land class abandoned between 1930 and 1945 were strikingly uniform.

The cost involved in clearing land suited to crops only to permit it to revert to brush and trees was enormous. This applied equally or more so to clearing and attempting to farm land that probably should have remained in forest. Much of this land had been cleared not only once but several times. Very little of the land abandoned before 1930 was recleared during the next 15 years. If the land abandoned between 1930 and 1945 also had remained uncleared, most of it would have grown into partially mature stands in the last 10 years. Considering these factors, to restore this land to farming probably would cost about $75 to $100 per acre at today's prices.

Although much of the abandonment of land before 1930 occurred under conditions unlikely to be repeated, the impact of subsequent abandonment on land use and land values was serious enough to warrant careful study. At the same assumed rate, the cost of restoring land suited at least to pasture which was abandoned during these 15 years would amount to more than a half million dollars. This would provide a crop and pasture base equivalent to 100 acres each for about 80 farms.

Land Clearing

Initially, the land had to be cleared before farming could be established. Since then, land clearing has continued to be important, particularly in replacing the acreage lost through reversion. Between 1930 and 1945, farmers tended to select land better suited to crops than in the past. Much of the advantage gained, however, was offset by the equal acreage of land suited to farming that was permitted to revert to brush and woodland. Clearing operations in 1945 continued to center largely on the pulling of young pine or the cutting of hardwood brush by hand on former abandoned fields. Only a few local people cleared land with machinery in either 1945 or 1950.

Nor did many undertake to clear and develop previously timbered tracts for farming, either on the well-situated Nason, Tatum, and other soils or elsewhere.

Extent of Clearing

A history of previous clearing was established for approximately 14,000 acres, or about 70 percent of the 20,000 acres in the sample (table 8; fig. 6). Of this, some 9,000 acres, or 65 percent of the total cleared area, was abandoned. This left only about 5,000 acres of open land in 1944. Although nearly 1,000 sample acres had been recleared from 1930 through 1944, this was nearly counterbalanced by the acreage permitted to revert in the 15 years. Observations made during a visit to the county in 1950 and information from the 1950 Census of Agriculture indicated that since then reversion had been slightly greater than clearing. Thus, the area available for farming without reclearing was further curtailed.

By comparing the percentages shown in table 8, then turning to figure 8, the limitations as well as some of the better features of this more recent clearing activity can be seen. Of the total acreage of cropland, that cleared after 1930 contained a somewhat higher ratio of land suited to crops than land cleared before that date. This was notably true of Second-Class soils.

Apparently, farmers had become increasingly selective in choosing land to be cleared or recleared for crops. However, this selectivity was not nearly so evident in land cleared in 1930 or later for pasture. Such factors as nearness to the farmstead and ease with which field pines could be pulled or hardwood brush cut were frequently the governing considerations. As a result, about 17 percent of the acreage cleared during the 15 years consisted of Fifth-Class and essentially nonagricultural soils.

Nearly half the acreage that had reverted before 1930 probably should not have been cleared for crops. The other half of this land was physically suited to continued use for farming. The large acreage of land that apparently had never been cleared included a very high ratio of Second and Third-Class soils. Practically all of the rest would have been suited to pasture.

Methods and Costs of Clearing

In 1950, bulldozers and other heavy earth-moving equipment were utilized mainly in clearing sites for new dwellings and similar spot-clearing operations. Power saws were also in use in felling trees and in cutting brush on pasture fields. As in olden times, however, axes, mattocks, and brush scythes continued to be the main tools used for clearing.

In 1944 and 1945, labor and other costs reported for carrying out the typical brushing-off efforts undertaken ranged from $10 to $20 or more per acre. This was about the same price at which such land or that in recently cutover tracts was selling. According to one owner, 3 days' labor by 1 man was required to clear an acre of brushland. At a wage of $4 for an 8-hour day, the prevailing scale in 1944, the cost of cutting and piling the brush

Table 8.- Percentage of land in various uses cleared during specified periods or apparently never cleared, sample area, Fluvanna County, Va., 1944

Item	Sample area	Percentage in physical land class 1/					
		Suited to crops				Unsuited to crops	
		All	First	Second	Third	Fourth	Fifth
	Acres	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
Land in farmsteads and miscellaneous uses, cleared: 2/							
Before 1930	192	89	0	39	50	8	3
1930 or after	42	98	0	55	43	0	2
Total	234	91	0	42	49	6	3
Cropland harvested, cleared:							
Before 1930	1,639	74	8	18	48	20	6
1930 or after	384	86	11	38	37	11	3
Total	2,023	77	9	22	46	18	5
Other cropland, cleared:							
Before 1930	400	81	14	18	49	14	5
1930 or after	127	88	3	30	55	10	2
Total	527	83	12	21	50	13	4
Pasture, cleared:							
Before 1930	1,287	55	6	12	37	35	10
1930 or after	438	59	7	14	38	24	17
Total	1,725	56	6	13	37	32	12
Other open land, cleared:							
Before 1930	508	62	7	17	38	31	7
1930 or after	0	0	0	0	0	0	0
Total	508	62	7	17	38	31	7

- Continued

Table 8.- Percentage of land in various uses cleared during specified periods or apparently never cleared, sample area, Fluvanna County, Va., 1944 - Continued

Item	Sample area	Percentage of physical land class 1/					
		Suited to crops				Unsuited to crops	
		All	First	Second	Third	Fourth	Fifth
	Acres	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
All open land, cleared:							
Before 1930----------	4,026	68	7	17	44	25	7
1930 or after--------	991	75	8	27	40	16	9
Total--------------	5,017	69	7	19	43	23	8
Abandoned land, reverted:							
Before 1930----------	8,308	50	2	19	29	32	18
1930 or after--------	982	59	3	14	42	30	11
Total--------------	9,290	51	2	18	31	32	17
Land cleared:							
Before 1930----------	13,316	56	3	18	35	30	14
1930 or after--------	991	75	8	27	40	16	9
Total--------------	14,307	57	4	18	35	29	14
Land never cleared:	5,934	73	3/	28	45	23	4
Total------------	20,241	62	3	21	38	27	11

1/ As mapped by soil type, slope, and erosion class. (See table 1.)

2/ Acreage occupied by dwellings, churches, schools, and other buildings, gardens, and home orchards.

3/ Less than 0.1 percent.

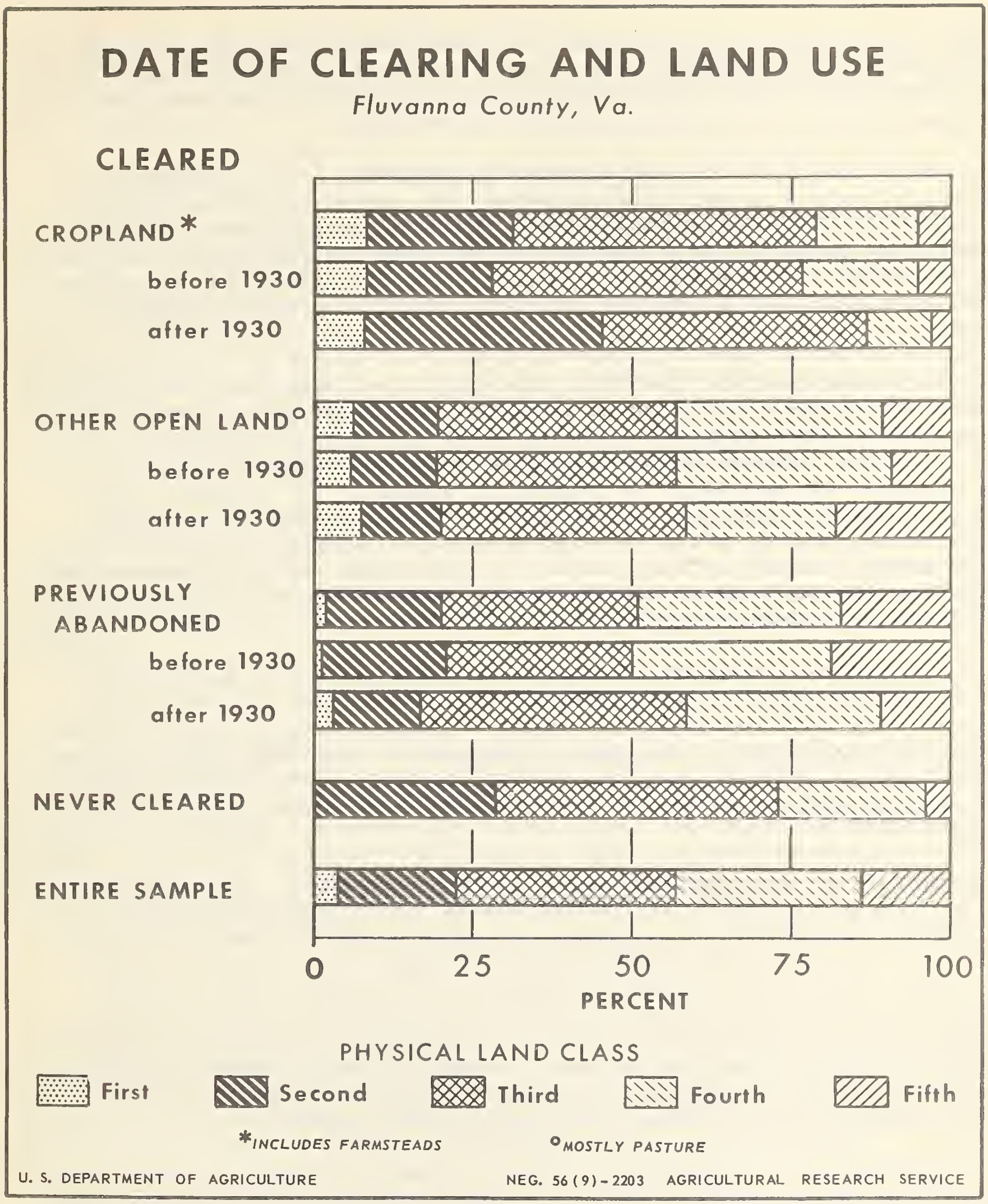

Figure 6.- Clearing of land for crops after 1930 was more selective than formerly, but much poorly situated land continued to be cleared for pasture. About half of the abandoned acreage should have been suitable for continued use for crops. Much of the acreage of the Second- and Third-Class soils apparently had never been cleared.

was $12. According to another report, the tenant received the landlord's share of the crop for clearing brush from an old field. In yet another instance, the tenant cleared the brush from some good bottom land with the understanding that this would entitle him to the crop.

Clearing woodland with power-operated felling and bucking equipment and bulldozers elsewhere in the Piedmont during this period cost about $50 per acre upward depending on the kind, number, and size of the trees. In most instances, the largest single item of cost was that for removing the stumps. Bulldozer blades with teeth had been found to prevent removal of topsoil as well as the mass of earth that adhered to the stumps removed from areas cleared.

Local timber operators had found that the use of power saws and other equipment to cut the trees close to the ground increased the output of pulpwood or timber. This method of clearing would also make it feasible to operate a double disk and similar implements over the stumps. Hence, it could eliminate the necessity for removal of stumps or for plowing the new ground. Preventive measures, such as light disking, mowing, or treatment with chemicals probably would control the undesirable sprout growth so often found on newly cleared pastures. At least part of the costs of clearing the land and the initial preparation and seeding could be met from the sale of pulpwood and other timber products.

It was estimated that the initial cost at 1945 prices of establishing an orchard grass-ladino clover pasture on new ground would have been about $44.50 per acre (appendix table 33). Most of these estimated costs were for purchase and application of the plant nutrients and lime necessary to improve fertility and correct soil acidity. Unless such amendments previously had been liberally applied, these requirements would be much the same on the land already farmed.

At least one or possibly more additional applications of an equal quantity of fertilizer probably would be necessary to maintain a satisfactory stand (20). Charges for the redisking or mowing needed to control brush and sprout growth would add only a few dollars per acre to the costs of maintenance. Such reseeding as might be necessary would be even less expensive.

This pasture probably would need to be supplemented during the summer when ladino clover is relatively dormant. But, even by removing livestock to lespedeza or other summer pastures, this or similar pasture mixtures should provide at least 6 months of spring and fall grazing.

Price records and experimental results on these and other Piedmont soils indicate that this and similar pasture mixtures would provide a fair to good return for meeting land and other charges (18, 20).

THE OWNERSHIP SITUATION

The rural land area of Fluvanna County in 1945 was subdivided into nearly 3,000 separate properties. These ownership units ranged in size from 1,000 acres or more to an acre or a fraction thereof. In addition, many of the smaller properties contained two or more separate tracts. About three-fourths of the properties contained less than 100 acres. In contrast, those of 100 or more acres included an equally high proportion of all farmland in the county.

Land Ownership in 1945

In 1945, most of the land was privately owned. The chief exceptions were those minor acreages utilized for churches, schools, and similar public purposes, and tax-delinquent tracts to which the Commonwealth of Virginia had acquired title. As land was listed mainly as owned by individuals or husbands and wives, there was very little to which title was vested in three or more persons and even less in a corporate entity. Nearly a fourth of the properties in the sample areas, or about a sixth of the acreage, were in unsettled estates. Negroes, including those deceased but in whose names tracts continued to be listed, owned about 40 percent of the privately held properties, but only approximately 10 percent of the acreage.

Only about a third of the owners maintained year-long residences on their properties, although nearly an additional fourth resided in Fluvanna or an adjoining county. Similarly, less than a third regarded themselves as farmers. Of this number again only about a third, many of whom were 65 years of age or older or were physically incapacitated, were engaged exclusively in farming.

Size of Property

Of the 300 properties in the sample, only 72, or about 25 percent of the total, contained 100 acres or more (table 9). In contrast, 52 contained less than 5 acres, while 191 ownership units, or nearly two-thirds, included less than 50 acres. Although they represented less than 10 percent of the number, the 26 properties of 200 acres or more occupied more than two-fifths of the sample area. Compared with this, the 191 properties of less than 50 acres contained only 14 percent of the acreage.

Physical Capabilities

The percentage distribution of the five physical land classes varied little among the various sizes of properties (table 10). Most residential-type holdings were located near roads, which in turn usually followed ridges. Accordingly, the smaller properties contained a higher percentage of Second- and Third-Class soils than the larger ownership units. The proportion of these smaller tracts on Fifth-Class soils also was above average.

A total of 78 properties, or about a fourth of those in the entire sample, contained 50 acres or more that would be physically suited for crops (appendix table 34). These properties encompassed approximately three-fourths of the sample acreage. They included all except 4 of the 72 properties that contained 100 acres or more and 10 of the 37 that consisted of 50 to 99 acres.

Table 9.- Number, total acreage, and average size of sample properties, Fluvanna County, Va., 1945

Size of property (acres)	Number		Acreage		Average size of property
	Properties	Percentage of sample	Area	Percentage of sample	
	Number	Percent	Acres	Percent	Acres
200 and over	26	9	8,724	43	336
100-199	46	15	6,100	30	133
50-99	37	12	2,571	13	70
20-49	62	21	1,916	9	31
10-19	44	15	607	3	14
5-9	33	11	200	1	6
Under 5	52	17	123	1	2
Total sample	300	100	20,241	100	68

Table 10.- Percentage and total acreage of sample properties of various size groups in each physical land class, Fluvanna County, Va., 1945

Size of property (acres)	Sample	Percentage in physical land class- 1/					
		Suited to crops				Unsuited to crops	
		All	1st	2nd	3rd	4th	5th
	Acres	Percent	Percent	Percent	Percent	Percent	Percent
200 and over	8,724	60	3	23	34	27	13
100-199	6,100	64	3	20	41	28	8
50-99	2,571	57	1	19	37	34	9
20-49	1,916	66	2	20	44	18	16
10-19	607	68	1	24	43	20	12
5-9	200	73	3	19	51	12	15
Under 5	123	75	2	23	50	11	14
Total sample	20,241	62	3	21	38	27	11

1/ As mapped by soil type, slope and erosion class. (See table 1.)

Most of the farmers who had shifted to general-purpose tractors were finding 100 to 150 acres to be the cropland base most efficiently operated. Whatever the future requirement may be, tracts that provide from 50 to 100 acres and possibly those in the 20- to 50-acre range generally would provide the best prospects for consolidation. In such instances, all that might be necessary to obtain enough acreage for a farm would be to find an adjoining owner willing to sell or, if the buyer is a prospective farmer, two neighboring owners who want to dispose of their holdings. More work would be experienced were an attempt made to block out a sizable holding when negotiations involved several separate tracts or a number of heirs.

Of the 78 sample properties that contained 50 acres or more physically suited for crops, 55, or nearly 70 percent, consisted chiefly of Nason, Tatum, and associated soils. The proportion of larger properties was thus somewhat higher in the Nason-Tatum belt than in the rest of the county.

Individual and Other Owners

Of the 300 sample properties, 275 were in private ownership in 1945 (table 11). They included about 92 percent of the number, and 99 percent of the acreage in the sample. The 25 properties in public ownership consisted almost entirely of small plots. They were divided between those acquired by the Commonwealth of Virginia through tax-foreclosure proceedings, and those held for school purposes and by religious denominations and burial societies.

Of the 275 privately owned tracts, 170, or more than three-fifths were listed in the name of an individual. Those to which title was vested in a man included many properties owned and managed by timber operators, dealers in real estate, and other businessmen. This and the added fact that many of those carried in the name of a woman had been acquired primarily for residential purposes probably accounted for most of the differences in average sizes shown. Married couples owned most of the 30 properties held jointly by two individuals. The 69 properties in unsettled estates ranked second from the lowest in size. They comprised approximately a fourth of the total number of privately owned properties.

White and Negro Owners

White persons held 166, or about 60 percent of the 275 privately owned properties in the sample, while Negro owners held 109, or 40 percent (table 12). Of the 109 properties owned by Negroes, 46, or more than two-fifths, were carried and taxes on them were paid in the name of individuals deceased for as much as a quarter century or more. Of the properties held by white owners, 23 were listed in the names of deceased owners.

The percentage of acreage on tax rolls that was held by white and Negro owners was about the same throughout the county as in sample areas (appendix table 35). The percentage distribution of assessed values between white and Negro owners was also nearly the same.

Properties of 50 acres or more were owned chiefly by white persons. Those consisting of 29 to 49 acres were more evenly divided. Those of less

Table 11.- Number, total acreage, and average size of sample properties held by individuals and other owners, Fluvanna County, Va., 1945

Ownership	Number: Properties	Number: Percentage of sample	Acreage: Area	Acreage: Percentage of sample	Average size of property
	Number	Percent	Acres	Percent	Acres
Privately owned:					
Individual:					
Male	125	42	10,516	52	84
Female:					
Single	24	8	1,383	7	58
Married	21	7	773	4	37
Dual:					
Couple	24	8	2,414	12	101
Other	6	2	1,040	5	173
Multiple and corporation	6	2	656	3	109
Estate	69	23	3,267	16	47
Total	275	92	20,049	99	73
Publicly owned:					
Commonwealth of Virginia 1/	11	3	66	2/	6
Fluvanna County School Board 3/	5	2	107	1	21
Church and Burial Society	9	3	19	2/	2
Total	25	8	192	1	8
Total sample	300	100	20,241	100	68

1/ Tax-forfeited land.
2/ Less than 0.5 percent.
3/ Includes one 100-acre tract.

Table 12.- Number, total acreage, and average size of sample properties held by white and Negro owners, Fluvanna County, Va., 1945 1/

Owner	Number		Acreage		Average size of property
	Properties	Percentage of sample	Area	Percentage of sample	
	Number	Percent	Acres	Percent	Acres
White owner:					
Living person------	143	52	15,672	78	110
Estates------------	23	8	2,536	13	110
Total------------	166	60	18,208	91	110
Negro owner:					
Living person------	63	23	1,110	5	18
Estates------------	46	17	731	4	16
Total------------	109	40	1,841	9	17
Total sample---	275	100	20,049	100	73

1/ Exclusive of 25 publicly owned properties.

Table 13.- Number, total acreage, and average size of sample properties held by persons residing or not residing thereon, Fluvanna County, Va., 1945 1/

Place of residence	Number		Acreage		Average size of property
	Properties	Percentage of sample	Area	Percentage of sample	
	Number	Percent	Acres	Percent	Acres
On property----------	93	34	7,491	38	80
Elsewhere:					
In county----------	48	18	3,545	18	74
Adjoining county---	19	7	2,849	14	150
In State-----------	17	6	1,183	6	70
Outside State------	29	10	1,714	8	59
In estates-----------	69	25	3,267	16	47
Total sample-----	275	100	20,049	100	73

1/ Exclusive of 25 publicly owned properties.

than 20 acres were held mainly by Negroes. The 23 properties in unsettled estates of white owners were fairly well distributed throughout all size groups. Those of Negro owners contained less than 100 acres.

About three-fourths of both white and Negro owners resided on the place or elsewhere in Fluvanna County. Most of the other white owners resided in adjoining counties or elsewhere in Virginia. Nearly all nonresidents among Negro owners lived outside the Commonwealth. A large percentage of owners who were farmers and who combined farming with another business, or who were engaged exclusively at another business or profession, were white. Nearly three-fifths of 63 Negro owners of properties not in unsettled estates were occupied entirely at farm, timber, and other local work.

Resident and Nonresident Owners

Only about a third, or 93, of the privately owned properties in the sample provided year-long places of residence for their owners in 1945 (table 13). Of the remaining 113 privately owned properties not in estates, 48 were held by persons who resided elsewhere in Fluvanna County, 19 by persons who lived in neighboring counties, 17 in other parts of Virginia, and 29 outside the State. A considerable number of those owned by individuals who resided elsewhere than in Virginia were bought as sites for future homes. They averaged fewer acres per property than any other group except estates.

Farmer and Other Owners

Only 88 of the owners of the 206 privately held properties not in estates were engaged in farming, and only 31 were engaged exclusively in farming (appendix table 36). Only 2 of the 20 farmers of less than 65 years of age were farming on the scale locally considered as required to provide an adequate income from farming. Of the younger farmers, 8 were nonresidents. Two of them were reported as engaged in farming in other States.

Of 25 owners who combined farming with another business or profession, 19 were timber or sawmill operators or livestock dealers. An additional 25 owners were businessmen or were occupied solely at their professions. Only 32 of 92 owners who worked for wages, salaries, or commissions were also doing some farming. Farm and timber work provided the chief source of employment for 21 of these 92 owners. The others were employed as rural mail carriers, clerks, salesmen, carpenters, mechanics, plant foremen or supervisors, bus or truck drivers, or as domestic or service workers. Most of the owners who were not gainfully employed had retired or were unable to work because of age or poor health.

Many of the properties held by owners who combined farming with another business or who were engaged exclusively at a business or profession were relatively large. Properties held by farmers who were 65 years of age or older averaged about 30 acres more per unit than those owned by younger farm operators. Most of properties held by owners who worked for wages, salaries, or commissions contained less than 50 acres. This was particularly true of properties whose owners were not farming.

Land Acquisition and Property Transfer

Method of Acquisition

Most of the sample properties in Fluvanna County were acquired by some type of purchase (table 14). Those acquired by inheritance, or a combination of inheritance and purchase, were not too important numerically but they occupied nearly a fifth of the sample area. Most of these combinations had resulted from the purchase by one heir of the interests of other heirs. Those acquired as gifts comprised a lower proportionate ratio of the total acreage than did any other class of privately owned properties.

Rate of Turnover

Purchases mainly for residential purposes or for timber accounted for most of the 50 transfers of sample properties by this method between January 1, 1940, and the midpoint of the year 1945 (table 15). The number of separate tracts purchased was considerably higher, as many individual properties had formerly consisted of two or more ownership units.

Table 14.- Number, total acreage, and average size of sample properties acquired through purchase and other methods, Fluvanna County, Va., 1945

Method of transfer	Number		Acreage		Average size of property
	Properties	Percentage of sample	Area	Percentage of sample	
	Number	Percent	Acres	Percent	Acres
Privately owned:					
Purchase	160	54	12,959	64	81
Purchase and inheritance	16	5	1,916	10	120
Inheritance	20	7	1,698	8	85
Gift	10	3	209	1	21
Unsettled estates	69	23	3,267	16	47
Total	275	92	20,049	99	73
Publicly owned:					
Tax-forfeiture	11	3	66	1/	6
Other 2/	14	5	126	1	9
Total	25	8	192	1	8
Total sample	300	100	20,241	100	68

1/ Less than 0.5 percent.

2/ Acquired for churches, schools, and public cemeteries.

Table 15.- Number of sample properties last transferred during specified periods, Fluvanna County, Va., 1945

Method of transfer	Sample properties	Last transferred - 1940-45	1930-39	1920-29	1910-19	1900-09	Before 1900	Other 1/
	No.	No.	No.	No.	No.	No.	No.	No.
Privately owned:								
Purchase	160	50	42	21	14	9	0	24
Purchase and inheritance	16	2	5	3	0	1	0	5
Inheritance	20	2	4	9	4	0	0	(1)
Gift	10	4	2	3	1	0	0	0
Unsettled estates	69	17	15	22	11	3	0	(1)
Total	275	75	68	58	30	13	0	31
Publicly owned:								
Tax forfeiture	11	1	8	0	1	0	0	(1)
Other 2/	14	0	2	1	0	2	6	(3)
Total	25	1	10	1	1	2	6	4
Total sample	300	76	78	59	31	15	6	35

1/ Includes properties consolidated by transfers in more than 1 period, and 6 properties (shown in parentheses) for which date of acquisition could not be obtained.

2/ Acquired for churches, schools, and public cemeteries.

The privately owned properties acquired by other methods generally had been held somewhat longer. Most of these were acquired during or shortly following the period of highly inflated land values that accompanied World War I, and many of the owners, or the heirs, were unwilling to sell for the lower prices offered. Nearly 10 percent of the total number had been acquired during two or more separate periods. This illustrates the difficulties associated with most efforts to consolidate ownership.

Property Boundaries and Descriptions

The poorly defined boundaries and often conflicting descriptions of properties frequently found during the field survey represented another obstacle to development of land in the past. All too often, litigation over the location of the boundaries between properties had proved expensive for the disputants. Uncertainty over the location and area within a particular tract had often been a source of trouble not only to individuals who were investing in real estate, but a deterrent to those who sought capital with which to acquire and improve land.

Many of these difficulties with boundaries traced back to inadequate surveys and overlapping of patents, which were granted when the area was first settled. The problem had been further compounded by frequent subdivision, disappearance of points of identification, accumulation of errors through successive resurveys, and the copying of old descriptions without notation of all previous changes.

Particularly when no recent survey had been made, some of the descriptions examined in 1945 merely conveyed so many acres located "near Kent's store," "3 miles east of Wilmington," or "near Logan land." If the adjoining owners were identified, the identification applied only to the tract at the time conveyance was last made, possibly many years previously.

Even when fairly detailed surveys were available points of origin were given which might be difficult if not impossible to reestablish by a future survey. These include such statements as "beginning at the northern-most point of the property," "beginning in the old hedge on Owens line," and "beginning in the old field." "An old stump," "a pine on a branch," and "a white oak" were among the many illustrations of markers used for identification purposes. These markers might be difficult to identify, particularly after a lapse of time.

If the point of origin could be established and the distance between points had been accurately given in the previous description, the boundaries of the tract could be readily found. That is, the boundaries could be found, provided that these directions and distances - "South___degrees East___rods" or "North___degrees West___rods" - were related to true north, or, if to magnetic north, the date of the compass reading had also been recorded.

Usually, when plat maps were included with the description of a property, they denoted directions and distances between readily identifiable points, as well as the date of the survey. Unfortunately, especially for most of the earlier transfers, plat maps were not made, or at least were not recorded.

Once prospective property owners become more fully aware of the advantages of the triangulation system, which was adopted by the 1946 General Assembly of Virginia (14, p. 36), trouble over boundaries can ultimately be eliminated. This would not correct past inaccuracies, but by working together to fix boundary lines, adjoining owners could open the way for removal of this perennial problem.

Subdivision of Land

The number of separate ownership units increased greatly in Fluvanna County during the last century. Compared with the average farm of more than 300 acres reported by the Census of 1850, the average reported 100 years later was 128 acres. Even these data are misleading, for the latter excluded many small residential tracts reported by former censuses. Also, many more farms probably consisted of two or more dispersed ownership units than in 1850.

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A number of the holdings in existence in 1850 remained fairly intact in 1945. Often they included several hundred acres. The chopping-up of the land into small parcels had been especially pronounced in the old plantation centers. With the collapse of the system, the land, if not already encumbered, often represented the only heritage to be conveyed to the next generation. After two or more partitionings among successive sets of heirs, the shares of the individuals who acquired real estate through inheritance usually were reduced to well under 100 acres.

Many of the parcels deeded as gifts or sold off by former owners or heirs contained space for scarcely more than the dwelling, outbuildings, and a garden spot. The acquisition of a compact tract for farming or timber growing was further complicated by the extent to which many of these residential plots had been permitted to remain in unsettled estates. Many separate owners would have to be in position as well as willing to sell, all within a reasonably short period of time. Time would be consumed in contacting absentee owners and heirs, many of whom might be difficult to locate.

Particularly when such tracts in the old plantation centers are accessible to an all-weather road, they will probably continue to be used for residential purposes. With the surfacing of many of the roads in Fluvanna County, the demand for sites for residential use may also result in the selling of additional frontage along improved highways and near towns.

Partitioning of Estates

The prevalence of unsettled estates in 1945 probably reflected a growing awareness of the futility of further partitioning of tracts among individual heirs. When a property was reduced to less than 100 acres, about the only alternatives other than residential use and timber production were either part-time farming, or some specialty enterprise. In the disposition of the property of deceased owners, partitioning, therefore, deserves attention because of the impact upon the future use and value of many properties.

The partitioning of a holding by two successive generations of heirs, followed by attempts at reconsolidation made by two of the grandchildren of the original owner, is illustrated in figure 7. In 1912, the holding was "partitioned into three parcels or shares having regard to quality, quantity and convenient compactness" and subject to the dower rights of the surviving spouse in the entire tract. The infant children of heir A were allotted about 119 acres of high ground and 19 acres of low ground. Heir B received some 86 acres of high ground and 14 acres of low ground, while heir C was allotted 84 and 14 acres, respectively, together with the homestead and the family burial plot.

Heir B and her husband built a home on their 100 acres. They continued to reside there and to farm the open land on this place and on some of the adjacent tracts inherited by relatives. Heir C remained until 1924, after which the bottom and open land on the adjacent slopes on his share were farmed by relatives. The house was occupied by tenants until 1937, when it became vacant. The holding was bought for the standing timber in 1943. In 1945 the dwelling and other buildings were hardly repairable.

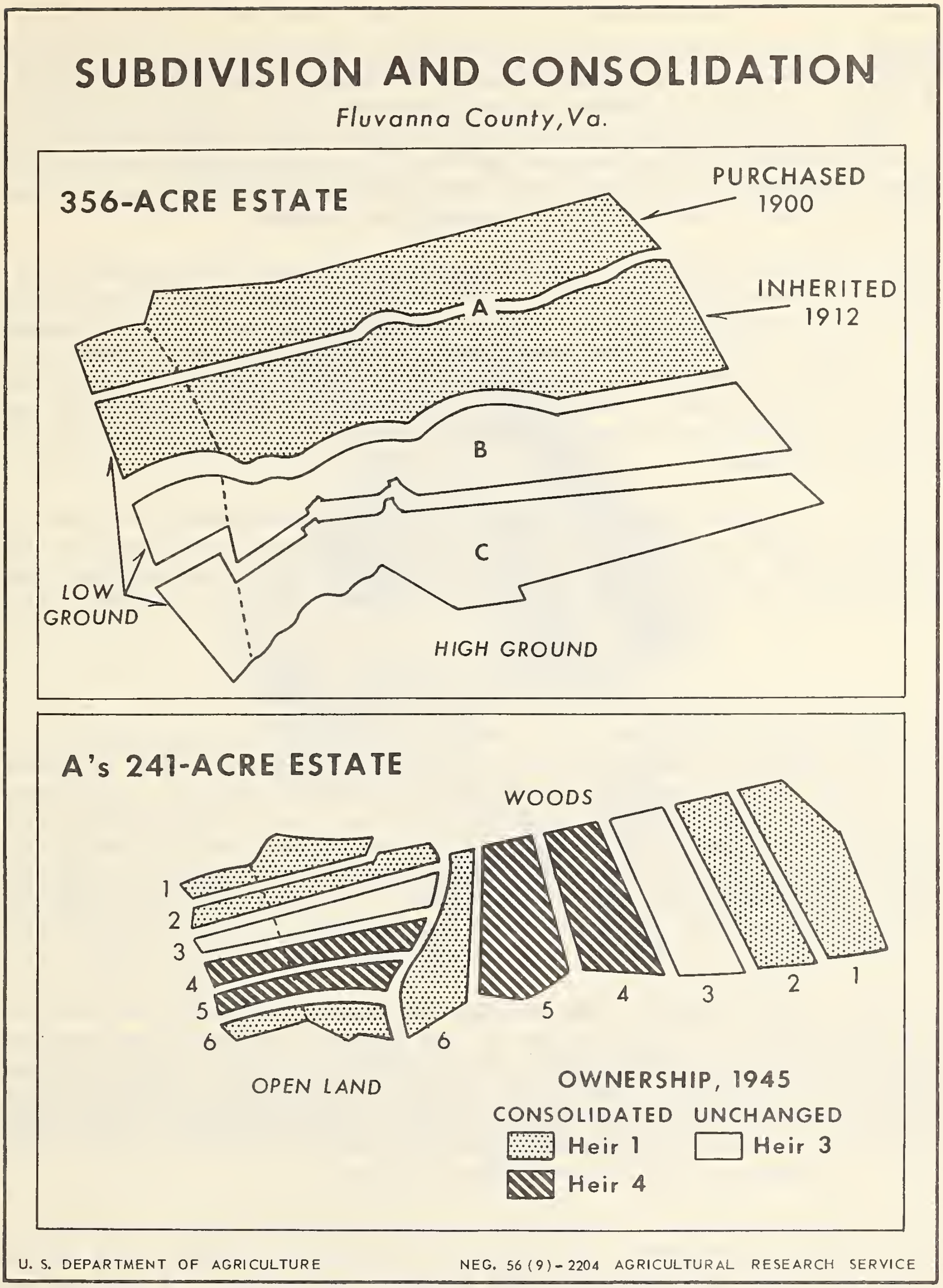

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Figure 7.- Frequent resort in the past to subdivision in the settlement of estates often resulted in the creation of tracts that were too small and dispersed to farm, except with adjoining land. Reconsolidation even of the 241 acres probably would require many years to complete.

With the 103.06 acres previously purchased, the holdings of heir A totaled approximately 240 acres. Although it was more compact than the holdings of either B or C, only about 80 acres had been cleared and developed for crops and pasture. When it was eventually subdivided among 6 heirs, each received approximately equal acreages of high and low ground. In this instance, a further subdivision was made of the high ground overlooking the bottoms, and of the woods beyond the small creek that ran through the holding.

Between 1924 and 1945, 1 of the daughters had bought the interests of a sister and 1 of the 2 brothers. This provided her with a total of approximately 120 acres in 2 separate tracts. One was a fairly compact block of timber of about 50 acres. The other included nearly 70 acres, but was U-shaped in design. In addition, the owner resided on and was custodian of a small tract inherited by a third sister. She was custodian also of the wooded tract and the other two separate tracts that the fourth sister had acquired through inheritance and purchase.

So long as the land remained in the family and arrangements were made to supervise the farming on all the tracts, little difficulty was likely to arise. Once one or more of the holdings were transferred to other individuals, however, the problems of reconsolidation and management would be much more complicated.

Chopping-Up of Tracts

The subdivision of holdings into small tracts was most pronounced in the old plantation centers. In one instance, most of the details of a chopping-up process which began about 1890 could be established (fig. 8). Once part of extensive holdings, the 369 acres in this particular tract were partitioned among 5 heirs. One daughter received about 81 acres in a fairly compact tract. A second received 1 parcel of some 23 acres, together with another of about 67 acres. The 2 granddaughters received 86 acres. The rest, which totaled 112 acres, went to a son. The heirs or their descendants sold off the land piece by piece. Ultimately, 27 parcels were created from the original 369 acres.

About half the acreage in the original tract was suited to crops, a comparatively high ratio for this section of the county. However, the areas of Appling and other well-situated soils were spread out along the narrow ridges that interlaced the holding. Hence, the layout of the entire holding was not too satisfactory for farming, particularly with modern machinery. The small parcels into which it was divided contained only enough land on which to grow a few crops for home use and for feeding work stock.

In the 55-year interval a number of consolidations of title were made by the first or later purchasers. One tract of 10 acres was bought from one heir and combined with the 15 adjoining acres bought from another. A noncontiguous parcel of about 5 acres was acquired by the owner of another 31 acres. In a third instance, detached tracts of less than 3 and of about 18 acres were bought by the owner of a piece of land of about 20 acres. In yet another instance, the current owner had bought about 4 acres, only half of which had been part of the original holding.

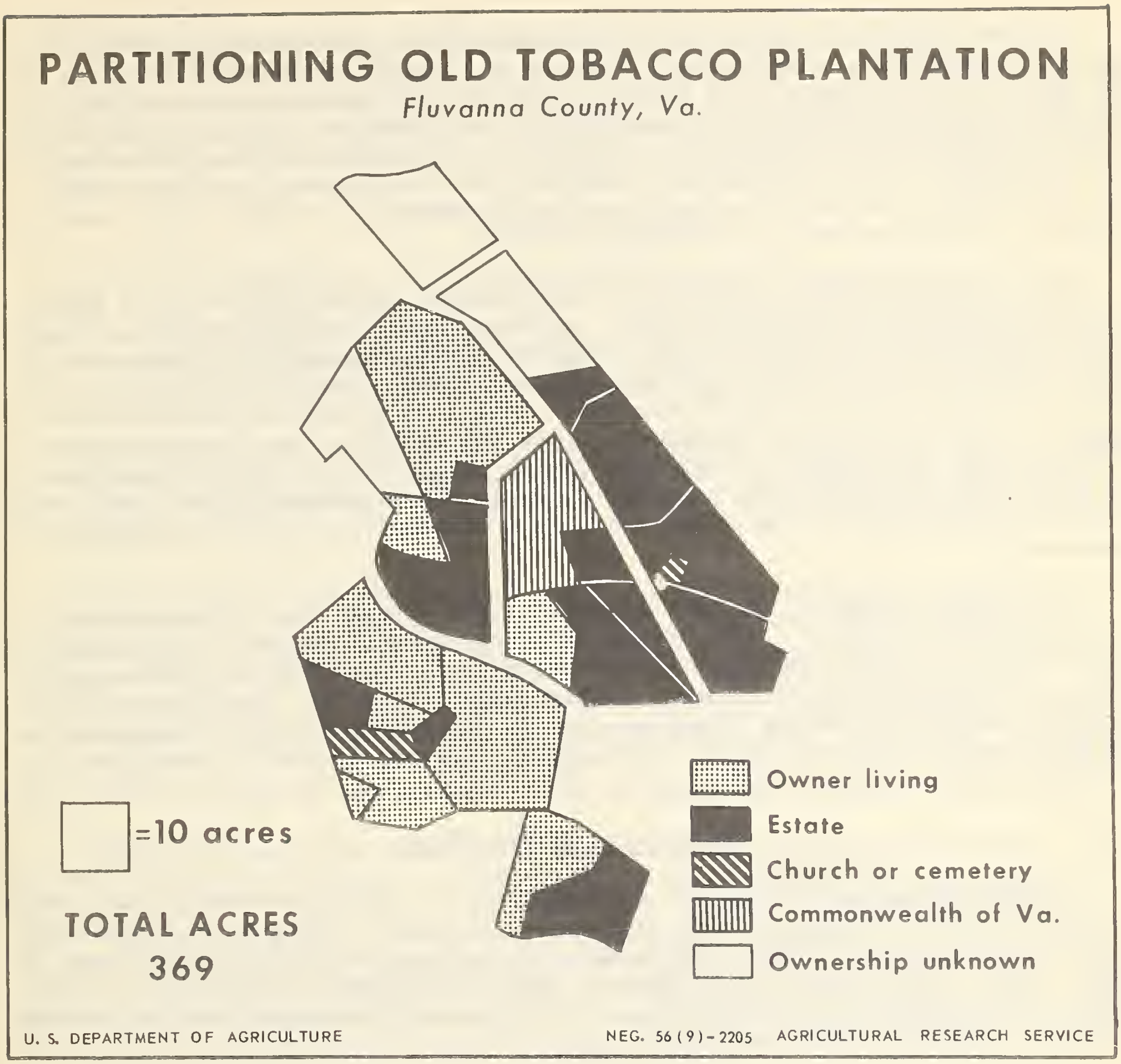


Figure 8.- The small parcels into which this 369 acres was eventually subdivided would be suitable mainly for residential or part-time farming purposes. The many units in unsettled estates would pose an additional handicap to any effort to enlarge the size of the individual holdings.

In the course of this period of approximately a half-century, other important changes had occurred in the status of both ownership and occupancy. The deed to one property of 22 acres sold about 1918 had not been recorded, and the owner had died shortly thereafter. As it was not listed on the tax books, title apparently had been reinvested in the Commonwealth. Including the adjoining tracts that had been combined into one property and the three separate tracts bought by an individual since deceased, at least 11 of the 26 existing properties were in unsettled estates.

Six of the unsettled estates and all except 1 of the 9 known to be held by living persons provided places of residence for 1 or more families. One of the latter contained 2 occupied dwellings, while 2 additional tracts in this category and 1 of the unsettled estates included separate housing for 3 families. The owner of the 25-acre unit created by combining adjacent tracts died in 1928, but a son continued to occupy the dwelling, pay the taxes, and farm the open land until his death in 1943. The house and outbuildings were of good construction and not in need of repair, circumstances which would be likely to induce one of the other heirs or a neighboring family to assume possession.

The tract forfeited to the Commonwealth and five of the estates either had never been occupied or the former buildings were no longer in existence. One of the remaining properties was occupied by a church and the other represented a community burial ground. Adding still further to the diffusion of control resulting from the chopping-up of the land into so many small parcels, 44 known heirs were entitled to a fractional interest in the 11 unsettled estates.

Dispersion of Ownership

Before 1945, many owners had acquired title to separate tracts which often were not located within the same magisterial district. These were frequently acquired for growing timber. The small size and scattered location of many of these tracts complicated the problem of adequate protection against fire and theft. The prospects for developing and efficiently managing them for farming purposes were even less promising.

Probable Extent of Dispersion

More than 10 percent of the 275 privately owned properties in the sample were assessed for taxation with other land held by the same person or persons (appendix table 37). In addition, a number of owners reported that they held other land in Fluvanna and adjoining counties which was listed separately for taxation purposes. Some of the larger scale timber growers owned hundreds and even thousands of acres in such scattered tracts.

Consolidation of Properties

By 1945, the many combinations made of adjoining tracts had arrested if not reversed the former trend toward progressively smaller and more dispersed ownership units. More than a fourth of the properties acquired through purchase represented a consolidation of two or more former ownership units. The proportion of the purchased acreage was much greater. By forestalling partitioning, the same result had been accomplished in instances in which properties had been willed or deeded to a member of the family, or in which an heir or another individual had bought the interests of the claimants to estates.

The Consolidation Process

Of the 160 properties acquired through purchase, 44 combined the former acreage in two or more adjoining ownership units (table 16). Fourteen of these consolidations included 100 acres or more. The acreage in 28 of these properties had been augmented through consolidation of 2 tracts, and 10 other properties contained land formerly in 3 or more ownership units.

Many tracts that had been recently consolidated through purchase or other transfers were still listed separately on the tax rolls (appendix table 37). Part of the tracts that had been combined earlier, however, had been relisted as single tracts.

Not all the consolidations made would provide satisfactory layouts for farms, especially when they were acquired for the timber, as investments, or as additions to country residences. The timber-growing property illustrated by figure 9 would be fairly difficult to lay out in fields that could be farmed efficiently. As both properties were centered on Nason soils, however, it would make a desirable addition to the adjoining farm. In another instance, acquisition of two tracts partially enclosed by a farm and timber-growing unit would greatly increase the acreage suited essentially to timber production.

Many of the existing properties, especially in the Nason-Tatum belt, were already comparatively large. A number of the combinations that resulted from the acquisition of adjoining tracts were also adapted to relatively large-scale farming. The 318 acres in one consolidation contained 272 acres suited to crops (color map 3). Clearing of the equally well-situated land across the highway would further augment the acreage available for cultivated crops. Most of the property could be farmed readily with tractor-drawn equipment. Special practices to control erosion would be needed mainly on the rolling land.

About 166 acres were in crop and pasture uses. The remaining 152 acres were chiefly in cutover hardwoods. Clearing of this additional land for farming would be fairly difficult and costly, particularly if the stumps were removed. A nearby tract operated by the owner included an even larger acreage of open land, most of which was similarly situated. Considering both the cropland base already available and the costs of further clearing, the potential agricultural land on either tract probably would not be developed in the near future.

Unsettled Estates

Provisions of the law for preserving dower rights and safeguarding the interests of minor heirs, together with concern for the welfare of an elderly parent and younger brothers and sisters, often accounted for the delay in

Table 16.- Number and acreage of purchased properties comprising consolidation of 2 or more ownership tracts, sample area, Fluvanna County, Va., 1945

Status	Sample properties	Size group					
		200 acres and over	100-199 acres	50-99 acres	20-49 acres	5-19 acres	Under 5 acres
	Number	Number	Number	Number	Number	Number	Number
Consolidation:							
No resale:							
2 tracts	28	2	4	6	9	5	2
3 or more tracts	10	5	2	0	2	0	1
Part resale 1/	5	0	1	1	1	2	0
Exchange	1	0	0	1	0	0	0
Total	44	7	7	8	12	7	3
No consolidation:							
Further subdivision	5	1	2	1	1	0	0
No change	111	11	15	17	21	31	16
Total	116	12	17	18	22	31	16
Grand total	160	19	24	26	34	38	19
	Acres	Acres	Acres	Acres	Acres	Acres	Acres
Consolidation:							
No resale:							
2 tracts	2,362	1,028	579	380	317	52	6
3 or more tracts	1,938	1,640	227	0	67	0	4
Part resale 1/	235	0	116	52	45	22	0
Exchange	53	0	0	53	0	0	0
Total	4,588	2,668	922	485	429	74	10
No consolidation:							
Further subdivision	663	284	270	85	24	0	0
No change	7,708	3,582	1,951	1,225	618	296	36
Total	8,371	3,866	2,221	1,310	642	296	36
Grand total	12,959	6,534	3,143	1,795	1,071	370	46

1/ Consists mainly of consolidations from which small parcels were later sold for residential purposes.

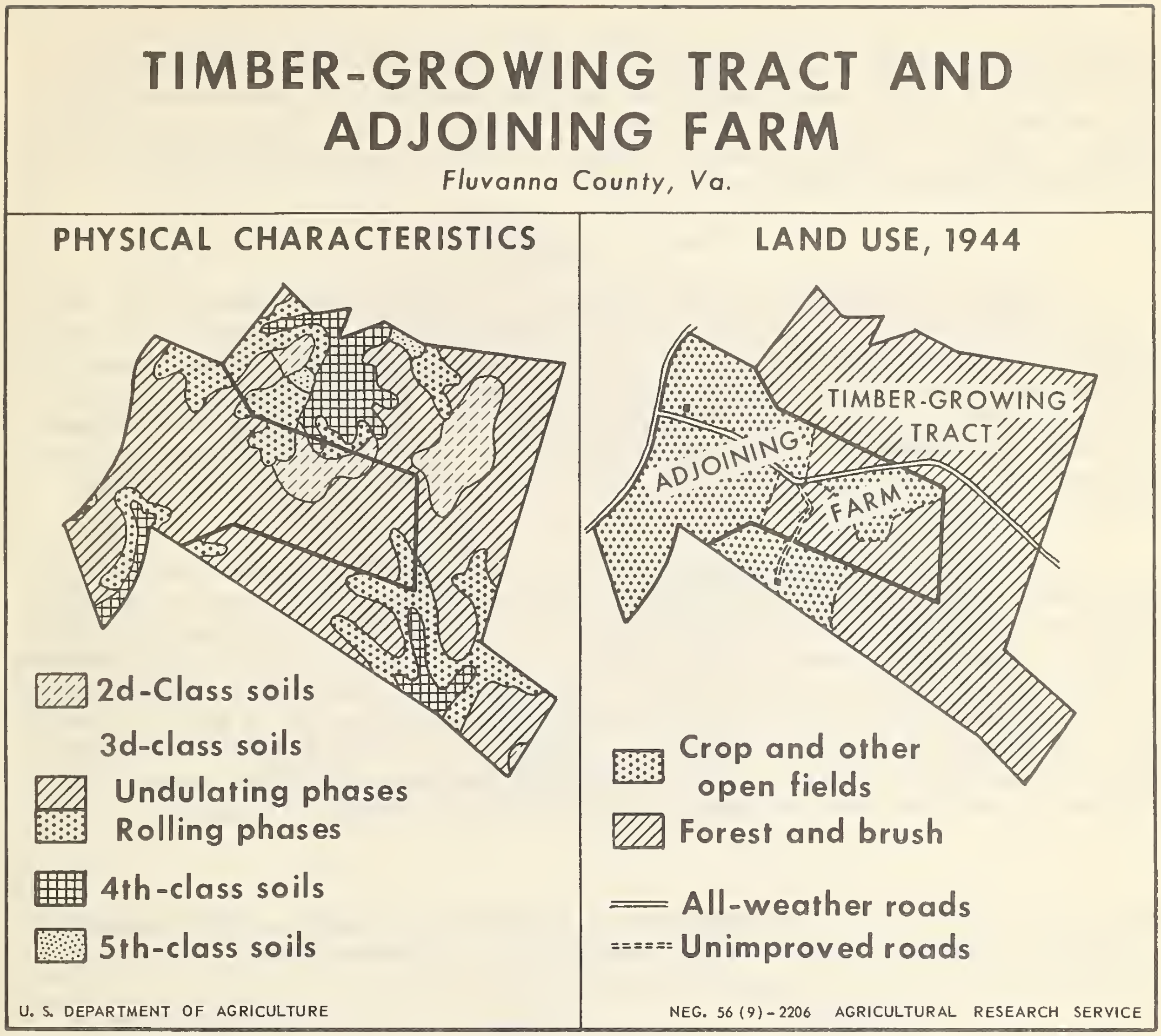


Figure 9.- This timber-growing property was acquired by purchasing several smaller tracts. Its physical layout would not be equally satisfactory for farming. Consolidation with the adjoining farm would add about 175 acres of land suitable for crops and pasture.

finally disposing of many estates (21). This time lag also was identified with the small total equity involved, and the inability of the survivors to find anyone willing to offer more than a fraction of the value. As a rule, smaller tracts of nonmerchantable timber and those lacking dwellings were not as readily salable as other properties.

Number of Heirs

A total of 379 first- and second-generation heirs were known to be entitled to a fractional interest in the 69 unsettled estates (table 17). This included a separate listing of the 2 groups of heirs each of which shared in 3 separate tracts and of a third group that was entitled to participate in the final settlement of 2 nonadjoining properties. In addition to 4 estates for which the number of claimants were unknown, this figure excluded an undetermined number of heirs to 11 additional properties for which the precise total could not be ascertained.

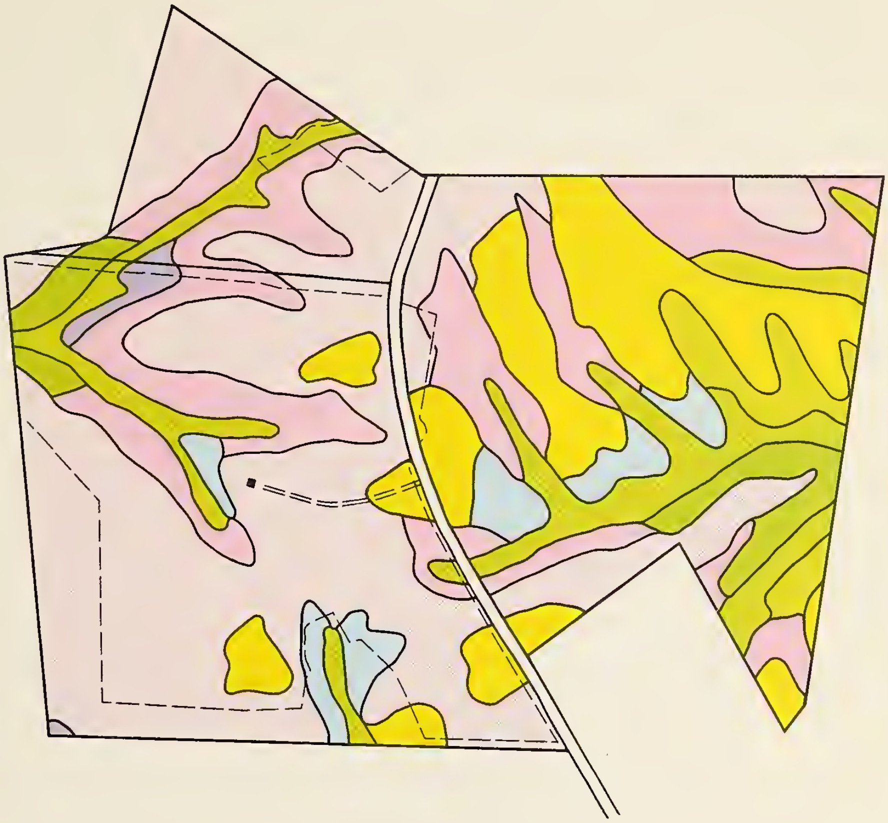
Illustrative of the compounding of the problem of settlement with any appreciable lapse of time were the 21 other part-owners to a 4-acre tract on which one of the daughters had maintained the taxes since the owner's death in 1922. Apparently some 35 heirs were entitled to shares in another property in the sample. In addition to the 125 acres in this tract, the estate included an additional 80 acres, which was about three-quarters of a mile to the east. A number of nieces and nephews as well as surviving brothers and sisters were among the heirs. One of the heirs was keeping up the taxes, but probate proceedings had not been initiated to make final settlement.

Table 17.- Number, total acreage, and average size of estates with specified numbers of white or Negro heirs, sample area, Fluvanna County, Va., 1945

Number of heirs	Number			Acreage			Average size of estate		
	Total	White	Negro	Total	White	Negro	Total	White	Negro
	No.	No.	No.	Acres	Acres	Acres	Acres	Acres	Acres
1-----------	2	0	2	10	0	10	5.0	---	5.0
2-4---------	33	7	26	1,718	1,272	446	52.1	181.7	17.2
5-9---------	20	13	7	1,237	1,109	128	61.8	85.3	18.3
10-19-------	8	2	6	138	30	108	17.2	15.0	18.0
20 or more--	2	1	1	129	125	4	64.5	125.0	4.0
Unknown-----	4	0	4	35	0	35	8.8	---	8.8
Total-----	69	23	46	3,267	2,536	731	47.3	110.3	15.9

CONSOLIDATION OF TWO TRACTS INTO 318-ACRE FARM

FLUVANNA COUNTY, VA.



SOILS AND LAND CLASS

SECOND CLASS SOILS

🟨 Tatum silt loam, undulating phase

THIRD CLASS SOILS

⬜ Nason silt loam, undulating phase

🟪 Nason silt loam, rolling phase

🟦 Lignum silt loam, undulating phase

FOURTH CLASS SOILS

🟩 Worsham silt loam

🟨 Manteo silt loam, rolling phase

🟩 Manteo silt loam, hilly phase

FIFTH CLASS SOILS

🟪 Manteo silt loam, eroded hilly phase

- - - - Boundaries open land

═══ All-weather road

Color Map 3

U.S. DEPARTMENT OF AGRICULTURE

Agricultural Research Service

The Sequence of Property Abandonment

In the past, neither size of holding nor scale of operation had been sufficient to forestall periods during which many properties were permitted to remain idle. For example, a 500-acre tract had been retained fairly intact for almost 120 years (fig. 10). Nevertheless, during at least two protracted periods, the property was part of an unsettled estate. During both periods, the land was neglected and the dwelling and other farm buildings were permitted to deteriorate.

Most of the land in this holding had been in cultivation at one time or another. The highest stage of development was about 100 years ago. At that time, there were said to be 8 tobacco barns and 8 to 10 families living on the place. Tobacco declined in value, and the soil was exhausted. Labor became scarce and the owner was unable to continue active management. Much of the open land went back to brush and trees.

The owner died intestate shortly before 1900. After setting off the widow's dower of 115 acres, the remaining 624 acres were partitioned into 2 approximately equal tracts as the shares of the 2 surviving sons. With neither tract apparently farmed in the interim, the heirs joined in selling both tracts to a new owner in 1904. Following its acquisition, the new owner recleared most of the old fields and made extensive repairs on the buildings. When he died in 1923, none of the heirs was interested in assuming operation. Until they were again taken over by pine and brush, the fields were rented to sharecroppers.

The 500-acre tract was bought in 1943 as a future farm for a son then in the service. When the property was visited in 1945, all except some steep and eroded land had been recleared for crops and pasture. The dwelling had been remodeled and a new barn and other buildings added. Fences had been restored. A large tonnage of fertilizer and lime had been applied to the recleared fields with the expectation of growing feed and forage and raising beef cattle. Much of the acreage suitable for farming had never been cleared. Thus, if future conditions should warrant it, the existing acreages of crop and pasture land could be greatly expanded.

LAND MANAGEMENT

The disparity between actual development and potential agricultural capabilities was marked on most of the sample properties. About half the ownership units were used neither for cultivated crops nor for pasture. Approximately a third of the properties that were farmed in 1944 were farmed only with other land. Usually, farming activities were confined to the few acres cropped by the owner or by relatives or other individuals, or to the pasture utilized by a neighboring farmer. Most of the units farmed only with other land as well as the idle tracts were not occupied and only a limited number had habitable dwellings.

About a third of the privately owned properties that were not farmed in 1944 were occupied as rural residences. Except for a few tracts that were

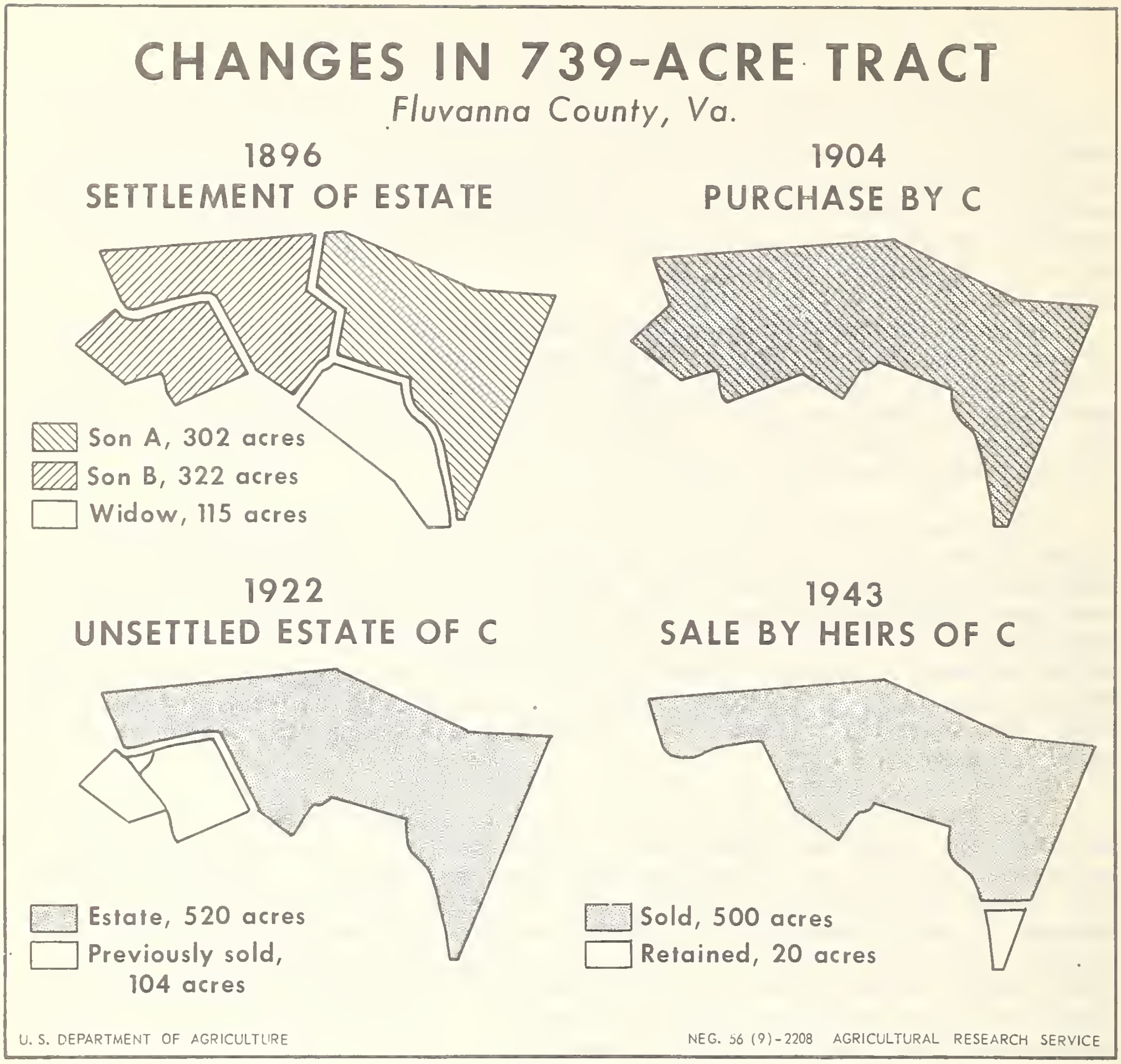


Figure 10.- The original tract of 739 acres was first acquired in the 1820's and 1830's. By 1945, the main tract had been reduced to 500 acres. Both in 1904 and 1943, the new owners had to reclear most of the old crop fields and repair the buildings.

temporarily idle, the rest were abandoned or completely forested. Other than a squatter's cabin on a forest tract, the buildings were no longer repairable, were gone, or had never existed.

Few operations were on a scale that would have enabled the operator and his family to derive their entire living from farming. The typical property on which farming was carried on contained from 5 to 19 acres of corn, hay, and similar crops. Actually, many of these properties were primarily rural residences. They differed from the many strictly rural homesites throughout the county only by a livestock and equipment inventory which consisted of a cow, horse or mule, and possibly of a plow, harrow, cultivator, and other small implements.

The small acreages in many individual holdings and the resulting lack of sufficient acreages suited to farming were important factors. However, they accounted only partly for the limited agricultural development observed in 1945. Nearly half the ownership units that contained 50 acres or more of potential cropland were used only for residential purposes, were idle or abandoned, or were completely forested. Except for some of the smaller tracts, only a fraction of the area suited to crops was utilized on most of the properties farmed.

Including tenants and part-owners as well as owner-operators, few farmers in the county were occupied solely at farming in 1944. Many individuals who confined their activities to farming had done so only as advancing years or poor health forced them to relinquish former businesses or off-farm employment. Very often working a place was an evening and weekend proposition, or it was handled by a teenage son when he was not in school.

The shortages of both family and hired labor faced by many of the farmers interviewed during the survey may have been more acute than formerly. Many individuals who had been called into service with the Armed Forces during World War II had not returned. Others, and this included entire families as well as individuals, had moved away at least temporarily to employment in the shipyards and other installations at Norfolk and Newport News or in defense industries elsewhere. There were some newcomers, but they were mainly wives and small dependents of servicemen, or former workers in Richmond and other cities and towns who had recently retired.

The prevailing lack of farmworkers helped to explain why many open fields were not in use and why some farms were idle as well as unoccupied at that particular time. Lack of help also was reflected in the number of occupied properties farmed only with the aid of relatives or neighbors, as well as in the many abandoned tracts and those which had already reverted to forest.

Since 1945, a number of veterans and other newcomers, as well as established farmers, have operated 100 acres or more of cropland and an equivalent acreage of pasture with only a minimum of family or hired help. Centering their operations on adjoining or fairly nearby holdings, most of them use grain combines, pickup balers, and other tractor-drawn equipment to eliminate most of the need for extra help. They rely chiefly on crops such as wheat and hay and on improved pastures. By working in partnership, exchanging help, or having the work done by a custom operator, many can devote at least part of their time to other businesses or employment. Some farmers have added a dairy enterprise. Others have found that the raising of beef cattle fits in more satisfactorily with their other interests and requires less family and other assistance.

These operators have been among the pioneers in adopting improved soil-management practices. Some of them have been farming for only a few years, and they have not applied these practices long enough to obtain their full benefit. Nevertheless, the improved management techniques applied to running the farm business and the greater diversity achieved have already placed most operations on a more stable basis than was often true in the past.

Operations in 1944

A total of 153 sample properties were farmed or provided some pasture in 1944 (table 18). The presence of one cropped field, some open or brush pasture, one head of livestock, or a poultry enterprise of 50 hens did not qualify many of these units as farms in the usual sense. For that matter, only 53 properties were managed as separate operating units. Of this number, 14 included only a cow, horse or mule, or a commercial poultry enterprise, and less than an acre from which a crop was harvested in 1944. The operators of the 27 headquarters units farmed additional land on one or more properties. In some instances, this additional land was on nearby units. In others, it was located several miles from the main headquarters. On 18 properties, farming operations were divided between those carried out by the owner and by other farmers, chiefly those who lived in the neighborhood.

The 55 properties farmed only with other land included a number of fairly large tracts. Only 12 were occupied. The 15 properties pastured only in 1944 frequently represented vacant or abandoned ownership units on which adjoining farmers pastured cattle or other livestock. In most instances, no rent was paid. Usually, the arrangement was that the neighbor look after the place for the owner. This arrangement had another advantage in that it made it unnecessary for the owners to maintain the line fences.

Of the properties not farmed, 50 were occupied only for residential purposes or served as sites for churches, schools, and public cemeteries. The 97 idle, abandoned, and completely forested tracts were larger, although they also included many small parcels. The forest tracts consisted both of properties formerly farmed or used for residential purposes and of tracts that had never been farmed or occupied.

Size of Property

Although most of the properties that contained less than 20 acres were not farmed in 1944, some farming was done on less than two-thirds of the larger units (appendix table 38). Four of the tracts of 200 acres or more had been abandoned, while 4 additional properties in this size group were completely forested. Whereas 8 of these larger properties were included with the single-property operating units, 8 others were farmed only with other land.

Table 18.- Number, total acreage, and average size of sample properties farmed and not farmed, Fluvanna County, Va., 1944

Operation	Number: Properties	Number: Percentage of sample	Acreage: Area	Acreage: Percentage of sample	Average size of property
	Number	Percent	Acres	Percent	Acres
Farmed in 1944:					
Single-property unit:					
Cropped in 1944	39	13.0	4,671	23.1	119.8
Not cropped in 1944 1/	14	4.7	433	2.1	30.9
Headquarters unit	27	9.0	1,891	9.3	70.0
Part of 2 or more units	18	6.0	1,656	8.2	92.0
Farmed with other land:					
Occupied:					
Cropped in 1944	12	4.0	1,890	9.3	157.5
Pastured only in 1944	3	1.0	524	2.6	174.5
Unoccupied:					
Cropped in 1944	28	9.3	2,465	12.2	88.0
Pastured only in 1944	12	4.0	443	2.2	36.9
Total	153	51.0	13,973	69.0	91.3
Not farmed in 1944:					
Rural residences	36	12.0	628	3.1	17.4
Churches, schools, and cemeteries	14	4.7	126	.6	9.0
Idle tracts	9	3.0	410	2.0	45.6
Abandoned tracts	34	11.3	2,325	11.5	68.4
Forest tracts	54	18.0	2,779	13.8	51.4
Total	147	49.0	6,268	31.0	42.6
Total sample	300	100.0	20,241	100.0	67.5

1/ Contained one commercial poultry enterprise; no farming on remaining 13 units in 1944, but at least a horse, mule, or cow was kept on the premises.

Status of Development

Not only were many of the larger properties not used for farming purposes, but not all the potential cropland on the more extensively operated ownership units had been developed (fig. 11). More than half the acreage in all properties on which some farming was carried on in 1944 was in forest (table 19). Even when the acreage occupied by farmsteads, together with that

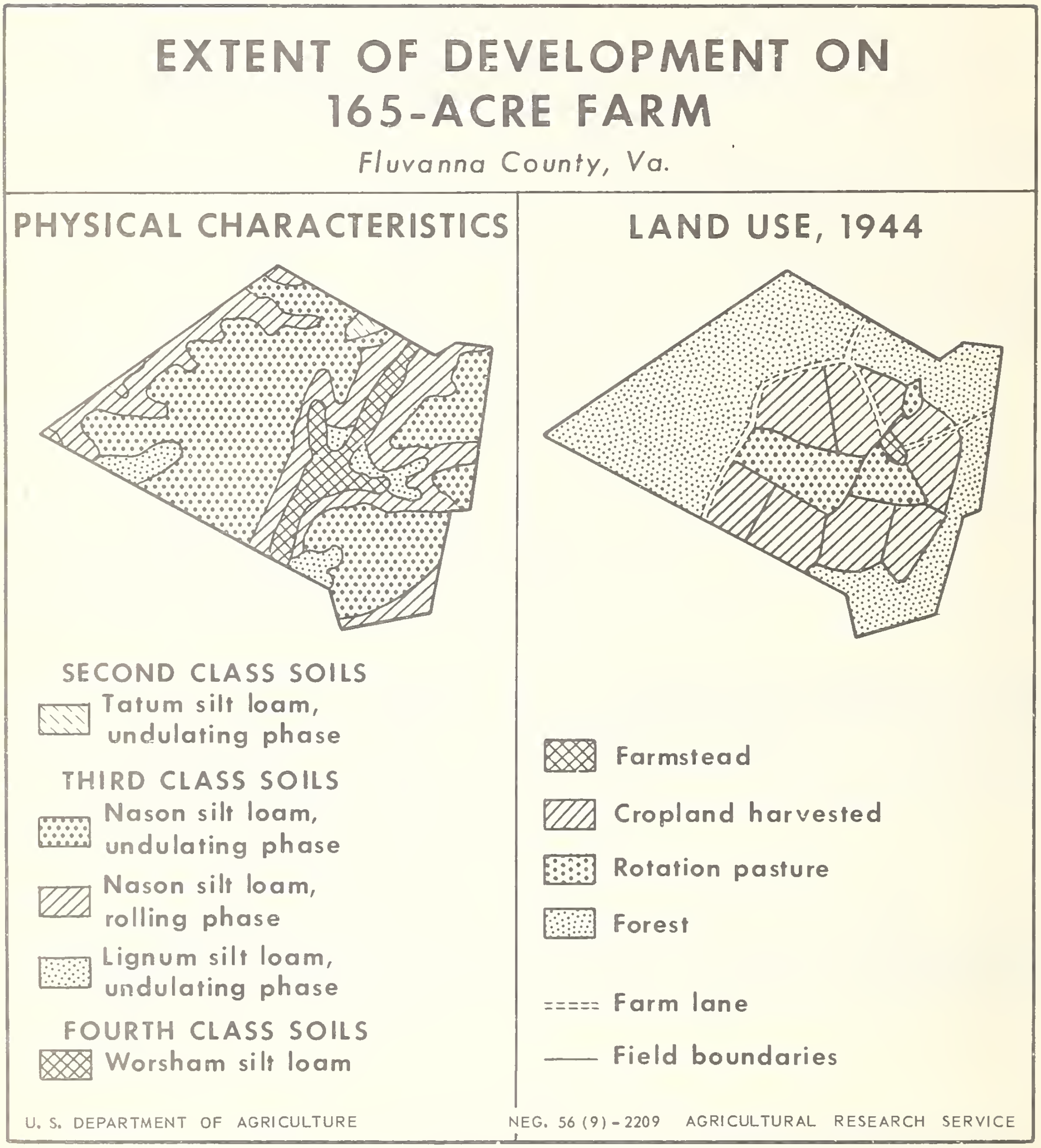


Figure 11.- A larger ratio of this farm than was usually found was in crop and pasture uses. Nevertheless, only part of the relatively smooth land on the ridges had been cleared and developed for farming.

Table 19.- Percentage of sample properties farmed and not farmed in cropland and other uses, Fluvanna County, Va., 1944

Operation	Sample acreage	Percentage in - Cropland 1/	Pasture	Idle land	Brush	Forest
	Acres	Pct.	Pct.	Pct.	Pct.	Pct.
Farmed in 1944:						
Single-property unit:						
Cropped in 1944	4,671	21	15	1	3	60
Not cropped in 1944 2/	433	10	10	1	2	77
Headquarters unit	1,891	26	19	3/	1	54
Part of 2 or more units	1,656	23	8	4	4	61
Farmed with other land:						
Occupied	2,414	11	7	3	3	76
Unoccupied	2,908	15	12	3	4	66
Total	13,973	19	12	2	3	64
Not farmed in 1944:						
Rural residences	628	13	0	10	8	69
Churches, schools, and cemeteries	126	22	0	0	0	78
Idle tracts	410	4/11	0	7	3	79
Abandoned tracts	2,325	5/ 2	0	5	9	84
Forest tracts	2,779	0	0	0	0	100
Total	6,268	3	0	3	5	89
Total sample	20,241	14	8	2	4	72

1/ Includes a total of 234 acres in farmsteads and in other dwellings, schools, churches, and public cemeteries.

2/ Contained one commercial poultry enterprise; no farming on remaining 13 units in 1944, but at least a horse, mule, or cow was kept on the premises.

3/ Less than 0.5 percent.

4/ Dwelling sites and idle cropland only.

5/ Idle cropland only.

in crops harvested, crop failure, and idle cropland is included, a maximum of only 25 percent of the acreage was in cropland. The headquarters units contained the highest percentage of agricultural land. In contrast, less than 20 percent of both the single-property units not cropped and the occupied properties farmed with other land was used for either crops or pastures.

Among the rural residences and the idle and abandoned tracts, much land was idle or the fields were already overrun by pines or hardwood brush. However, many of those on which some farming was done contained one or more fields in one or both of these categories. This was notable on the properties that made up part of two or more operating units.

No crops were harvested from a total of 38 of the 153 properties farmed. On two others, the fields from which crops were harvested were not situated on land suited to this purpose (appendix table 40). Of even greater significance, less than 40 percent of the potential cropland was utilized on most of the remaining 113 ownership units. A high ratio of the harvested crops on many units continued to be situated on land not adapted to crops and often not to pastures (appendix table 41). Less than 80 percent of the harvested crops on a total of 36 properties were situated on the first three physical land classes. In 4 instances, less than 40 percent were on land suited to crops. Those on which all or most of the current acreage was concentrated on land physically suited to crops were small or contained limited acreages of crop and other open land.

Ownership Characteristics

The properties on which some farming was done contained a relatively high percentage of the ownership units held by white persons and those not in unsettled estates (appendix table 42). Of the 153 properties in the various classes, 101 were held by white owners. Only 10 of these properties were held in the names of deceased persons. The properties held by Negro owners accounted for only about a third of the total number farmed. They included approximately two-thirds of the unsettled estates. A high ratio of Negro owners was found among the units used for residential purposes only. Some farming was done by a family who continued to live on a tax-forfeited tract, while livestock were permitted to range over three others by neighboring operators. Except for 1 property that was occupied as a homesite only and an abandoned tract, the remaining 5 tax-forfeited parcels had completely reverted to forest.

Most of the 93 properties that provided a year-long place of residence for their owners were farmed and the rest were used for residential purposes (appendix table 43). About 70 percent of the 69 properties in unsettled estates were either farmed or utilized as rural residences. A total of 70 of the 113 properties held by nonresidents were in idle, abandoned or forest tracts, and 28 of the remaining 43 properties were farmed only with other land.

All except 5 of the 31 properties held by owners engaged in farming and 48 of the 57 whose owners combined farming with other business or employment were farmed in 1944 (appendix table 44). The percentage of the properties farmed that were owned by persons engaged entirely in another business or a profession was much lower. An even smaller percentage of those held by individuals working for wages, salaries, or commissions were farmed during the year.

Occupancy Situation

A total of 113 of the sample properties farmed in 1944 and all of the 36 rural homesites provided a place of year-long residence for at least 1 and sometimes 3 separate households (appendix table 45). Ten properties contained 2 dwellings, and 4 others included housing for 3 separate households. This was a fairly common situation on unsettled estates held in the names of deceased Negroes. It also occurred when the property represented a recent consolidation of two or more former ownership tracts.

In addition to the 93 owner-residents, 35 dwellings were occupied by part-owners, that is, heirs to unsettled estates, and 39 by tenants. Apart from the dwellings actually occupied, 27 others were habitable. Three of the 27 dwellings were used occasionally by their owners as vacation or other temporary headquarters. The remaining 24 dwellings had not been occupied at any time during the first 6 months of 1945, but they were kept in repair and some were partly furnished.

Building Replacements

The protracted period during which many of the sample properties were unoccupied usually meant that the next owner had to reclear the land, add all new buildings, and repair extensively or restore all or most of the accessory structures. Of the current owners of the 167 sets of buildings that were occupied by separate households in 1945, 77 had had to construct both new dwellings and all other buildings required (appendix table 46). In 35 additional instances, dwellings had to be remodeled or extensively repaired. Thus, the owners were able to occupy only 47 farmsteads or other rural homesites without first making major additions or complete renovations.

Farm and Other Income

Despite its rank as one of the most rural counties of Virginia, the income derived from nonfarm sources by farmers and other rural householders in Fluvanna County greatly exceeded the gross cash receipts from farming. In both 1949 and 1954, only a few local farmers sold crop and livestock products that grossed $10,000 or more. A far greater number of farmers sold less than $1,000 worth of products. The majority of these farmers worked 100 days or more off the farm. About half the operators sold little or none of the products they grew. They relied mainly on receipts from other sources to meet current expenses, make improvements, and pay debts. The farm itself provided mainly housing accommodations and products for the family table.

Sources of Income

Fairly detailed information was obtained for 50 sample properties that were farmed in 1944, together with an additional 40 establishments, none of which reported either receipts or expenditures for farming (table 20). The properties that were classed as farmed consisted chiefly of those farmed as a single unit. In addition, they included some headquarters and other units for which all information regarding operations were available. Complete information concerning receipts and expenditures was available for only a few of the larger farms. Although some residents carried on large-scale businesses, data relating to incomes other than those from cutting and selling pulpwood were also almost completely lacking.

The cash receipts from the sale of farm products, as well as other income among the 50 households in the sample engaged in doing some farming in 1944, totaled approximately $77,000. Of this amount, $33,000 or more than 40 percent, was derived from off-farm labor by the operator and members of his family, from the sale of timber or pulpwood, and from such sources as pensions, servicemen's allotments, financial assistance from former members of the household, and receipts from the rental of another dwelling on the place. Including the $35,000 derived from nonfarm sources by the other 40 households reporting, about $68,000, or three-fifths of the total was obtained from sources other than farming.

Income from Farming

Only 140, or about an eighth of all farmers in Fluvanna County, reported sale of products in 1939 of $1,000 or more (table 21). Value of farm products sold in 1944 equaled or exceeded $1,000 on 338, or nearly a third of the farms. Fewer farmers reported 1949 sales of $1,000 or greater than were reported 5 years previously. Despite reductions in number of farm operators, the percentage was also lower. As in 1939, about half of all farm operators reported no sales in 1949 or the value of farm products sold was less than $250.

Of the 889 farms in 1949, less than a third were classed as commercial farms (table 22). Thirteen percent were Class VI and an additional 17 percent were part-time farms. More than half were residential units. Although there were fewer farms in 1954, the percentage of commercial as contrasted to other

Table 20.- Cash receipts from farming, income from nonfarm sources, value of crops, and cash expenses of farming, 90 selected properties, Fluvanna County, Va., 1944

Status	Cash receipts from farming	Nonfarm income					Total cash income	Cash farming expenses
		Total	Labor		Timber products	Other 1/		
			Operator	Family				
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
Farming done	43,717	32,974	15,494	3,151	7,677	6,652	76,691	33,003
No farming done	---	34,926	24,630	6,262	---	4,034	34,926	---
Total	43,717	67,900	40,124	9,413	7,677	10,686	111,617	33,003

1/ Pensions, servicemen's allotments, financial aid from former members of household, and rental receipts.

Table 21.- Number of farmers who reported specified values from products sold, Fluvanna County, Va., 1940, 1945, and 1950

Value of products sold	1940	1945	1950
	Number	Number	Number
No sales	19	28	127
$1-$249	501	160	335
$250-$399	198	226	85
$400-$999	299	302	155
$1,000-$2,499	113	223	118
$2,500-$5,999	26	96	46
$6,000-$9,999	1	13	8
$10,000 and over	0	6	15
Total	1,157	1,054	889

Published reports, Agricultural Census of 1940, 1945, and 1950 (16).

farms was about the same. The number of Class I, II, III, and IV farms increased, but the decline in Class V and VI farms more than matched increases. The increase in part-time farms was only partly offset by the decrease in residential units.

Recent data on the value of products consumed by farm households are not available. Nearly half the 1939 and more than a third of the 1944 farm products were used by farm families. In the last 10 years, there has been an increase in both number of farms used mainly for raising produce for home consumption and in part-time farms. Apparently, there has been little or no change in value of products sold by all farmers in Fluvanna County. Thus, it is possible that the proportion of products consumed on the farm in 1954 was as high as or higher than in 1944.

Farmwork Power

In 1945, only about 10 percent of the farmers in Fluvanna County had tractors. By 1950, nearly 20 percent were operating with tractors or with both tractors and work animals (appendix table 47). In the next 5 years, the percentage of farms with tractors about doubled. Despite increases in farm tractors, nearly a third of operating units continued to be farmed only with horses and mules. As in 1950 and probably in 1945, nearly an additional third had neither tractors nor work animals.

Increased use of tractors resulted in moderate expansion of number of farms on which 50 acres or more of crops were harvested. Shifts from horses and mules to farm tractors resulted also in some increase in feed and forage available for cattle and other livestock.

Table 22.- Number and percentage of farms by economic class, Fluvanna County, Va., 1950 and 1954

Economic class of farms 1/	1950		1954 2/	
	Number	Percent	Number	Percent
Commercial farms:				
Class I and II ($10,000 and more)	15	2	16	2
Class III ($5,000-$9,999)	21	2	36	5
Class IV ($2,500-$4,999)	33	4	62	8
Class V ($1,200-$2,499)	90	10	51	7
Class VI ($250-$1,199)	119	13	80	10
Total commercial farms	278	31	245	32
Other farms:				
Part-time 3/	149	17	207	26
Residential (less than $250)	462	52	316	41
Abnormal 4/	0	0	5	1
Total other farms	611	69	528	68
Total farms	889	100	773	100

1/ Amounts shown are value of farm products sold.

2/ Preliminary.

3/ Value of products sold $250-$1,199 and operator reporting 100 days or more of off-farm work or other income exceeding value of agricultural products sold.

4/ Public and private institutional farms or community enterprises.

U. S. Census of Agriculture (16).

Productive Livestock

The number of cattle and calves on farms increased by about 3,000 or by approximately 60 percent in the 10-year period (appendix table 48). Most of the increase was in beef cattle. Number of milk cows in 1954 were about the same as in 1945, but there was about a 10-percent decline in farms reporting. There were increases in numbers of sheep and lambs and of hogs and pigs on farms in the county. Both farms reporting and number of chickens on hand decreased by more than a third.

BUYING LAND

In 1945, a large number of ownership units in Fluvanna County changed hands (appendix table 49). This period of rapid turnover of farm and other real estate began in 1943 and extended to 1948. In this 6-year period, prices per acre about doubled. Except in 1951, less than 100 tracts were transferred annually in years since 1948. Average prices per acre for land sold on credit continued to increase, but those for cash sales remained at about $30 per acre until 1954. As only 66 ownership units were transferred during the year, this increase may have resulted from the sale of an unusually large number of highly developed farms or small residential plots.

About three-fourths of the sample properties bought during the 5 years preceding the field survey were acquired for residential purposes, for timber, or in anticipation of an increase in value. Nearly an additional 20 percent were bought for part-time farming. Widespread cutting in the last 10 years greatly reduced the number of timber stands ready for market. Apparently, there was little or no expansion in demand for land for either farming or residential purposes. As a result, increases in land values were not nearly as marked as in many other counties in Virginia (15).

Locating Land for Sale

Most of the properties likely to be available to future purchasers probably will continue to be offered by individuals. In some instances, it may prove feasible to acquire adjoining tracts held by different owners, or eventually to block up a farm by acquiring scattered holdings in the same community. Many of those already established as either full-time or part-time farmers or who bought their holdings for growing timber or for residential or recreation purposes may not wish to sell. Among the prospective sites likely to be available to a farmer who wants to buy land are those acquired for the timber but with the expectation of resale, as well as those purchased to await an increment in value. It may be possible also to acquire some of the unsettled estates from the heirs.

Although the prices currently asked may be somewhat higher than formerly, by searching, a prospective farmer should find many tracts for sale within a reasonable price range. This includes those unimproved tracts that contain neither buildings nor open land and those whose owners are not interested in farming.

Source of Properties Purchased

Of the 160 sample properties purchased, 111, or nearly 70 percent of the total, had been acquired from another individual or individuals (table 23). Approximately 60 percent of the acreage purchased had been acquired from individuals unrelated to the new owner. An additional 21 of the 140 sample properties acquired from a single specific source were bought at court or administrator's sale in the settlement of an estate. Of the remaining 8 properties in this category, title to 4 had been received through tax-sale proceedings, 3 were former school sites, and the deed to the eighth had been conveyed at a foreclosure sale. Purchase of 19 properties involved 2 or more sources.

Properties Bought for Farming and Other Purposes

Although only 5 of 62 sample properties transferred through purchase in the 5 years preceding June 30, 1945, were acquired for full-time farming,

Table 23.- Number and total acreage of sample properties bought from individuals and other sources, Fluvanna County, Va., 1945

From whom or how acquired	Number		Acreage	
	Properties	Percentage of sample	Area	Percentage of sample
	Number	Percent	Acres	Percent
Single source:				
Individuals:				
Relatives	7	4	718	6
Nonrelatives	104	65	7,024	54
Legatee sale	21	13	1,877	15
Tax sale	4	2	151	1
Other 1/	4	3	52	2/
Total	140	87	9,822	76
Two or more sources	19	12	3,118	24
Unknown	1	1	19	2/
Total purchased properties	160	100	12,959	100

1/ Corporation, foreclosure sale, and school board.
2/ Less than 0.5 percent.

they contained more than a fifth of the acreage (table 24). Those acquired for part-time farming were about double in number, but they were far smaller in size. The properties intended for residential purposes were even more numerous, and they were also much smaller in area. Only 10 of the 20 properties in the latter class were occupied at the time the properties were visited in 1945. Seven of the unoccupied properties included at least a livable dwelling. They were intended for occupancy as retirement homes or homesites from which to engage in employment elsewhere. The rest represented sites of a few acres each on which the owner expected to build.

The 15 properties bought primarily for the standing timber comprised only about a fourth of the number purchased, but included about two-fifths of the acreage. Those intended for resale ranked third in size. Usually, they consisted of semiabandoned farms on which the purchaser had made repairs to the buildings and recleared at least part of the fields. Those acquired with the expectation of an increment in value as well as those bought for the timber only included a higher ratio of small tracts.

Table 24.- Number, total acreage, and average size of sample properties bought January 1, 1940 to June 30, 1945, for farming and other purposes, Fluvanna County, Va.

Purpose of acquisition	Number		Acreage		Average size of property
	Properties	Percentage of sample	Area	Percentage of sample	
	Number	Percent	Acres	Percent	Acres
Farming	5	8	1,075	21	215
Part-time farming	11	18	441	9	40
Residential:					
Occupied	10	16	173	4	17
Potential:					
Retirement place	4	6	35	1	9
Homesite	3	5	154	3	51
Building site	3	5	25	1/	8
Timber harvest:					
Probable resale	11	18	1,787	36	162
Timber only	4	6	159	3	40
Investment:					
Timber growing	3	5	532	11	177
Increment in value	7	11	440	9	63
Other (Recreation)	1	2	150	3	150
Total 62 purchased properties	62	100	4,971	100	80

1/ Less than 0.5 percent.

Costs of Acquisition and Development

The wide variety of tracts that can probably be acquired assures both small and large investors opportunity to buy and develop the type of holding they desire. Newcomers will find that those owners who are already developing full-time farms command the land and productive facilities required for farming on a scale comparable to that elsewhere in the Piedmont. In order to farm on this scale, newcomers will need to obtain the necessary capital with which to buy the land, and when necessary to clear and fence it, apply soil-improvement measures, and add or renovate the dwelling and other buildings. In addition, plans must be made to finance the purchase of the farm machinery and livestock necessary to operate and stock the place. If interested only in part-time farming, a newcomer should also learn what local employment is available.

Cost of Improved and Unimproved Tracts

Many of the larger tracts that were transferred during the 5 years preceding the survey were bought at prices in the $10 to $19 per acre range.

Some smaller tracts, notably those with modern buildings and conveniences or which were located on improved roads or near local towns, commanded higher prices. Often, the value of the pine or hardwood timber on the place affected the price more than did the size and condition of the dwelling and accessory buildings.

Sources of Capital Invested

Most of the investment in land and improvement on the sample properties was derived from businesses or professions, from cutting timber and other forms of work, and from inheritances and gifts (appendix table 50). Receipts from farming supplied only a little more than 10 percent of the total investment in land and existing improvements. The percentage of the money invested in new dwellings and other improvements was somewhat higher.

Buildings and Facilities Available

Of the 286 sample properties, exclusive of those occupied by churches, schools and cemeteries, 118, or approximately two-fifths, lacked habitable dwellings in 1945 (appendix tables 51-52). About two-thirds of the dwellings that were in use or that could have been utilized were classed as good or fair. Twenty-two of the properties without dwellings contained at least 50 acres of potential cropland. There was no cropland on 91 of these properties, and the rest had less than 50 acres of land in harvested crops, crop failure, and idle cropland. On the other hand, there was no cropland on 48 of the 168 properties with habitable dwellings, and less than 50 acres on all except 14 of the remaining units.

Many of the residences that lacked electricity in 1945 are now served by or are accessible to the power-distribution lines added since then. Similarly, running water and modern plumbing have been installed in many additional dwellings in recent years. Most residences in the sample areas were on roads that had been improved by 1945. Fluvanna County is served by both a main and a branch line of the Chesapeake and Ohio Railway. The county has consolidated schools, many churches, and other community facilities and services.

Financing

Indebtedness was incurred in financing the purchase of the land, adding additional acreages, and replacing or remodeling the dwelling or other buildings by only 22 of the 275 private owners in the sample. Even less resort to credit had been made in order to clear additional land, build fences, or buy livestock or machinery.

In 9 of the 22 instances in which funds had been borrowed, loans had been repaid in full or repayment was scheduled before the end of the year 1945. Usually, the contracts negotiated enabled the purchaser to assume immediate possession, but he was entitled to a deed only after the final installment had been paid. Down payments were seldom required and the contract provided for repayment in annual or semiannual installments. This arrangement had enabled those with very little capital to establish themselves on the land. Some had applied a part of their wages or other income from off-property sources on the payments. Others had cut and marketed enough timber or pulpwood from the place to more than pay for it.

Relatives and other individuals, usually the former owner, together with nearby commercial banks were the chief sources of funds borrowed. The customary rate of interest was 6 percent. A number of life insurance companies and such agencies as the Federal Land Bank and the Home Owners Loan Corporation were also listed as holding mortgages on some properties.

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APPENDIX

Table 25.- Percentage of major soil associations in each physical land class, selected areas, Fluvanna County, Va., 1945

Major soil association	Acreage 1/	Percentage in physical land class 2/					
		Suited to crops				Unsuited to crops	
		All	First	Second	Third	Fourth	Fifth
	Acres	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
Underlain by schist:							
Nason-Tatum-Manteo	5,725	90	0	16	74	10	0
Tatum-Nason-Manteo	6,357	87	0	51	36	13	0
Nason-Manteo-Tatum 3/	1,221	87	0	4	83	13	0
Manteo-Wehadkee-Worsham	981	48	0	2	46	36	16
Manteo-Tatum-Nason	5,503	11	0	6	5	57	32
Underlain by quartz monozonite:							
Goldvein-Nason-Worsham	305	93	0	0	93	7	0
Underlain by granite:							
Appling-Louisburg-Colfax	1,326	93	0	16	77	7	0
Appling-Cecil-Louisburg	2,114	83	0	33	50	17	0
Cecil-Appling-Louisburg	206	76	0	39	37	24	0
Appling-Louisburg-Colfax 4/	1,665	46	0	2	44	45	9
Louisburg-Appling-Cecil	2,486	14	0	2	12	37	49
Underlain by mixed rock:							
Helena-Vance-Appling	1,898	58	0	10	48	33	9
Underlain by quartz mica schist:							
Madison-Louisa-Lloyd	2,243	61	0	41	20	24	15
Underlain by Hornblende gneiss:							
Lloyd-Fluvanna-Bremo	2,028	81	2	50	29	19	0
Orange-Fluvanna-Zion	855	77	5/	10	67	23	0
Fluvanna-Lloyd-Bremo	1,222	65	5/	39	26	32	3
Bremo-Orange-Fluvanna	1,239	37	1	7	29	61	2
Underlain by old alluvium:							
Hiawassee-Masada-Wickham	1,063	85	15	34	36	15	5/
Underlain by new alluvium:							
Congaree-Mixed-Chewacla	1,632	58	53	5/	5	39	3

1/ Sample acreage supplemented for associations with little or no representation in the sample.

2/ As mapped by soil type, slope, and erosion class. (See table 1.)

3/ Nason soils included are mostly loams and not silt loams as in other associations.

4/ Appling soils included are mostly gritty fine sandy loams and not sandy loams as in other associations.

5/ Less than 0.5 percent.

Table 26.- Acreage and percentage of specified crops harvested in various groups, Fluvanna County, Va., 1944 and 1954

Crop	1944		1954 1/	
	Acres	Percent	Acres	Percent
Intertilled:				
Corn	5,993	26	3,912	20
Tobacco	118	1	106	1
Truck crops 2/	332	1	46	3/
Orchards and vineyards 4/	297	1	52	3/
Other intertilled crops 5/	423	2	505	3
Total	7,163	31	4,621	24
Small grains: 6/				
Wheat	3,610	16	1,680	9
Oats and barley	887	4	1,294	7
Other small grains	332	1	464	2
Total	4,829	21	3,438	18
Hay and forage:				
Alfalfa	224	1	870	4
Clover and timothy	1,924	9	2,117	11
Lespedeza 7/	8,345	37	5,303	28
Small grains cut for hay	9	3/	496	3
Other hay and forage crops 8/	319	1	2,411	12
Total	10,821	48	11,197	58
Total all crops	22,813	100	19,256	100

1/ Preliminary.

2/ Acreages in white and sweetpotatoes and other vegetables for sale.

3/ Less than 0.5 percent.

4/ In 1954, excludes data for farms reporting less than 20 fruit or nut trees or grapevines.

5/ Sorghums, except for sirup, and soybeans and cowpeas grown alone.

6/ Harvested for grain.

7/ Cut for hay or seed. 1944 and 1954 acreages mostly second crop following small grains.

8/ In 1954, includes small acreage of green silage.

U. S. Census of Agriculture (16).

Table 27.- Percentage of physical land classes in Tatum and other soils and in various slope and erosion classes, sample area, Fluvanna County, Va., 1945

Designation	Sample area	Percentage of physical land class 1/				
		First	Second	Third	Fourth	Fifth
	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
Soils:						
Underlain by schist:						
Tatum	18	0	70	5	2	0
Nason	23	0	0	59	2	0
Lignum	1	0	0	3	0	0
Manteo	20	0	0	5	43	58
All other	38	100	30	28	53	42
Total all soils	100	100	100	100	100	100
Slope:						
Level	7	79	0	1	17	1
Undulating	48	20	99	60	13	0
Rolling	25	1	1	39	37	2
Hilly	15	0	0	2/	32	54
Steep	5	0	0	0	1	43
Total all slope classes	100	100	100	100	100	100
Erosion:						
Alluvial and colluvial deposits	12	89	1	3	30	1
No apparent erosion	31	0	47	41	14	13
Slight erosion	47	11	51	50	48	36
Moderate erosion	3	0	1	6	4	1
Severe erosion	7	0	2/	2/	4	49
Total all erosion classes	100	100	100	100	100	100

1/ As mapped by soil type, slope, and erosion class. (See table 1.)
2/ Less than 0.5 percent.

Table 28.- Acreage and percentage of sample area in each slope class, Fluvanna County, Va., 1945

Description	Range	Area	
	Percent	Acres	Percent
Level	Less than 2	1,448	7
Undulating	2-10	9,768	48
Rolling	10-16	5,073	25
Hilly	16-30	2,936	15
Steep	30 and more	1,016	5
Total sample	---	20,241	100

Table 29.- Acreage and percentage of sample area in various erosion classes, Fluvanna County, Va., 1945

Description	Erosion class	Area	
		Acres	Percent
Alluvial and colluvial deposits	+, 0	2,400	12
No apparent erosion	1	6,219	31
Slight erosion	2, 27	9,581	47
Moderate erosion	28, 3, 37	707	3
Severe erosion	2(7), 2(8), 3(7) 38, 3(8)	1,334 1/	7
Total sample		20,241	100

1/ Includes 38 acres of stony and rough gullied land.

Table 30.- Production of principal crops, Fluvanna County, Va., 1839-1949

Year	Production				
	Corn 1/	Wheat 1/	Other small grains 1/	All hay	Tobacco
	1,000 bushels	1,000 bushels	1,000 bushels	1,000 tons	1,000 pounds
1839	182	62	70	0.6	1,280
1849	200	93	62	.4	1,055
1859	210	128	98	.6	2,584
1869	126	77	68	.5	894
1879	206	47	36	1.0	918
1889	160	28	41	3.3	407
1899	247	39	17	3.5	1,288
1909	195	28	15	4.0	895
1919	212	45	15	4.9	365
1929	191	41	7	5.4	205
1939	169	39	26	8.2	131
1949	146	42	35	11.0	75

1/ Harvested for grain only, except oats cut and fed unthreshed; other small grains converted to weight equivalents in bushels of oats.

Figures are chiefly estimates based on the decennial census (16).

Table 31.- Number of livestock on farms, Fluvanna County, Va., January 1, 1840-1950

Year	Horses	Mules	Cattle				Hogs	Sheep
			All cattle	Milk cows	Oxen	All other		
	Number	Number	Number	Number	Number	Number	Number	Number
1840	1,720	210	5,430	1,530	1,050	2,850	8,800	5,450
1850	1,510	180	4,900	1,380	950	2,570	8,540	4,830
1860	1,660	460	4,960	1,730	950	2,280	8,350	3,200
1870	1,210	320	4,490	1,850	720	1,920	8,770	2,090
1880	1,430	350	4,200	1,560	740	1,900	6,050	2,090
1890	1,610	400	4,600	1,830	670	2,100	4,780	1,660
1900	1,880	560	4,090	1,900	1/	2,190	6,710	1,450
1910	1,710	640	4,300	2,440	1/	1,860	3,360	1,190
1920	1,980	960	4,130	2,550	1/	1,580	4,430	740
1930	1,210	830	3,500	2,000	1/	1,500	3,000	1,000
1940	880	730	4,200	2,300	1/	1,900	3,200	1,160
1950	790	350	5,860	2,490	1/	3,370	3,610	850

1/ Not reported separately since 1890.

Numbers as reported by decennial census (16) converted to January 1 estimate for stock of all ages.

Table 32.- Descriptive items relating to migrants from sample households, Fluvanna County, Va., 1945

Item	Migrants		
	Total	Males	Females
	Number	Number	Number
Age left home:			
Under 20 years	118	52	66
20-24 years	71	39	32
25-29 years	27	15	12
30 years and over	11	8	3
Unknown	18	12	6
Total	245	126	119
Present location:			
Returned property	7	5	2
Elsewhere, county	39	12	27
Adjoining counties	30	11	19
Elsewhere, Virginia	39	17	22
Outside Virginia	68	23	45
Armed services 1/	47	46	1
Unknown 2/	15	12	3
Total	245	126	119
Schooling:			
Completed college	5	4	1
Attended college	6	2	4
Completed high school	38	15	23
Attended high school	42	21	21
Completed grade school	18	12	6
Attended grade school	123	65	58
No schooling	6	2	4
Unknown	7	5	2
Total	245	126	119
Present occupation: 3/			
Farmers	22	9	13
Business or profession	9	0	9
Craftsmen	44	22	22
Farm and timber workers	14	10	4
Other laborers	30	18	12

- Continued

Table 32.- Descriptive items relating to migrants from sample households, Fluvanna County, Va., 1945 - Continued

Item	Migrants		
	Total	Males	Females
	Number	Number	Number
Present occupation: 3/ Continued			
Service workers	32	9	23
Armed service personnel	53	46	7
Unemployed	2	0	2
Confined institutions	4	2	2
Unknown	35	10	25
Total	245	126	119

1/ Entered from Fluvanna County.

2/ Mostly servicemen entering after leaving county.

3/ Occupation of husbands listed for married women.

Table 33.- Estimated initial costs per acre of establishing pasture on newly cleared land, Fluvanna County, Va., 1945

Item	Unit of quantity	Quantity	Price per unit	Total cost
		Number	Dollars	Dollars
Amendments:				
Ground limestone	Tons	2	3.00	6.00
Fertilizer	Pounds	800	.30	24.00
Total		---	---	30.00
Seed:				
Ladino clover	do.	2	2.00	4.00
Orchard grass	do.	10	.40	4.00
Total		---	---	8.00
Preparation and seeding:				
Initial disking	Acres	1	4.00	4.00
Spreading lime	do.	1	1.00	1.00
Drilling seed and fertilizer	do.	1	1.50	1.50
Total		---	---	6.50
Total costs		---	---	44.50

Based principally on experimental data, supplemented by cost data supplied by farmers interviewed in 1945.

Table 34.- Number of sample properties of various sizes containing specified acreages suited to crops, Fluvanna County, Va., 1945

Size of property (acres)	Sample properties	Acres suited to crops 1/					
		200 or more	100-199	50-99	20-49	5-19	Under 5
	Number	Number	Number	Number	Number	Number	Number
200 and over	26	11	15	0	0	0	0
100-199	46	0	13	29	4	0	0
50-99	37	0	0	10	22	5	0
20-49	62	0	0	0	30	30	2
10-19	44	0	0	0	0	39	5
5-9	33	0	0	0	0	18	15
Under 5	52	0	0	0	0	0	52
Total sample	300	11	28	39	56	92	74

1/ Combined acreage in the first 3 physical land classes, as mapped by soil type, slope, and erosion class. (See table 1.)

Table 35.- Acreage and assessed value of properties held by white and Negro owners in entire county and in sample, Fluvanna County, Va., tax year 1944

ENTIRE COUNTY 1/

Owner	Area		Assessment					
			Total		Land and standing timber		Buildings and improvements	
	Acres	Pct.	Dollars	Pct.	Dollars	Pct.	Dollars	Pct.
White	154,601	88	1,537,860	89	803,985	89	733,875	89
Negro	20,394	12	195,260	11	102,675	11	92,585	11
Total	174,995	100	1,733,120	100	906,660	100	826,460	100
SAMPLE 2/								
White:								
Living	15,672	78	122,495	77	65,300	75	57,195	80
Estate	2,536	13	18,235	11	12,690	14	5,545	7
Total	18,208	91	140,730	88	77,990	89	62,740	87
Negro:								
Living	1,110	5	10,380	7	5,500	7	4,880	7
Estate	731	4	7,950	5	3,760	4	4,190	6
Total	1,841	9	18,330	12	9,260	11	9,070	13
Grand total	20,049	100	159,060	100	87,250	100	71,810	100

1/ Totals for entire county exclude minor acreages and value of town lots and the buildings and improvements thereon (19).

2/ Assessed value of sample properties excludes value for 29 properties assessed with other land, as well as the 25 publicly owned tracts.

Table 36.- Number, total acreage, and average size of sample properties held by farmers and other owners, Fluvanna County, Va., 1945 1/

Occupation 1/	Number: Properties	Number: Percentage of sample	Acreage: Area	Acreage: Percentage of sample	Average size of property
	Number	Percent	Acres	Percent	Acres
Farmer:					
Under 65	20	7	1,878	9	94
65 and older	11	4	1,363	7	124
Total	31	11	3,241	16	104
Farmer-other occupation:					
Farmer-businessman 2/	25	8	3,715	18	149
Farmer-worker 3/	32	11	2,147	11	67
Total	57	19	5,862	29	103
Other occupation:					
Businessman 2/	25	8	3,219	16	129
Worker 3/	60	20	2,027	10	34
Member armed services	3	1	205	1	68
Total	88	29	5,451	27	62
All other:					
Not gainfully employed	27	9	1,968	10	73
Unsettled estates	69	23	3,267	16	47
Publicly owned	25	8	192	1	8
Unknown	3	1	260	1	87
Total	124	41	5,687	28	46
Total sample	300	100	20,241	100	68

1/ For married couples, occupation listed is that of the husband, and for multiple owners it is that of individual residing nearest property.

2/ Includes lawyers, doctors, and other professional people.

3/ Owners receiving salaries, wages, or commissions.

Table 37.- Number, total acreage, average size, and percentage of sample properties with or without improvements that were assessed at various rates per acre, Fluvanna County, Va., 1944

Assessment per acre	Sample properties	Area	Average size of property	Percentage	
				With improvements	Without improvements
	Number	Acres	Acres	Percent	Percent
Single tract: 1/					
Under $5	63	6,956	110	67	33
$5-$9	121	6,463	53	65	35
$10 and more	25	169	7	52	48
Total	209	13,588	65	64	36
Multiple tracts: 2/					
Two tracts:					
Same rate	8	835	104	100	0
Different rate	26	3,689	142	96	4
Three tracts	3	894	298	67	33
Total	37	5,418	146	95	5
Assessed with other land 3/	29	1,043	36	41	59
Not assessed 4/	25	192	8	64	36
Total sample	300	20,241	68	66	34

1/ Properties listed as single tracts on tax rolls.

2/ Properties listed as 2 or more tracts for taxation purposes.

3/ Properties combined for taxation purposes with other and nonadjoining tracts.

4/ Publicly owned properties.

Table 38.- Number of sample properties farmed and not farmed in various size groups, Fluvanna County, Va., 1944

Operation	Sample properties	Size group - 200 acres or more	100-199 acres	50-99 acres	20-49 acres	5-19 acres	Under 5 acres
	No.	No.	No.	No.	No.	No.	No.
Farmed in 1944:							
Single-property unit:							
Cropped in 1944	39	8	11	6	11	3	0
Not cropped in 1944 1/	14	0	1	2	1	7	3
Headquarters unit	27	1	4	5	7	8	2
Part of 2 or more units	18	1	7	5	2	3	0
Farmed with other land:							
Occupied	15	4	2	2	5	2	0
Unoccupied	40	4	8	3	10	10	5
Total	153	18	33	23	36	33	10
Not farmed in 1944:							
Rural residences	36	0	2	2	4	16	12
Churches, schools, and cemeteries	14	0	1	0	0	1	12
Idle tracts	9	0	2	0	3	2	2
Abandoned tracts	34	4	4	4	8	9	5
Forest tracts	54	4	4	8	11	16	11
Total	147	8	13	14	26	44	42
Total sample	300	26	46	37	62	77	52

1/ Contained one commercial poultry enterprise; no farming on remaining 13 units in 1944, but at least a horse, mule or cow was kept on the premises.

Table 39.- Number of sample properties farmed and not farmed that included specified acreages suited for crops, Fluvanna County, Va., 1944

Operation	Sample properties	Acreage suited to crops 1/							
		50 or more				Less than 50			
		Total	200 and over	100-199	50-99	Total	20-49	5-19	Under 5
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Farmed in 1944:									
Single-property unit:									
Cropped in 1944	39	20	4	5	11	19	11	8	0
Not cropped in 1944 2/	14	2	0	1	1	12	2	6	4
Headquarters unit	27	8	1	1	6	19	5	10	4
Part of 2 or more units	18	8	1	2	5	10	5	4	1
Farmed with other land:									
Occupied	15	6	3	2	1	9	6	3	0
Unoccupied	40	12	1	5	6	28	8	12	8
Total	153	56	10	16	30	97	37	43	17
Not farmed in 1944:									
Rural residences	36	2	0	1	1	34	3	13	18
Churches, schools, cemeteries	14	1	0	0	1	13	0	1	12
Idle tracts	9	2	0	1	1	7	0	5	2
Abandoned tracts	34	8	0	5	3	26	7	11	8
Forest tracts	54	9	1	5	3	45	9	19	17
Total	147	22	1	12	9	125	19	49	57
Total sample	300	78	11	28	39	222	56	92	74

1/ Combined acreage in the first 3 physical land classes, as mapped by soil type, slope, and erosion class. (See table 1.)

2/ Contained one commercial poultry enterprise; no farming on remaining 13 units in 1944, but at least a horse, mule, or cow was kept on the premises.

Table 40.- Number of sample properties with specified percentages of land suited to crops in harvested crops, Fluvanna County, Va., 1944 1/

Use or operation	Properties farmed	Percentage of land suited for crops in crops harvested					
		80 percent and more	60-79.9 percent	40-59.9 percent	20-39.9 percent	0.1-19.9 percent	None 2/
	Number	Number	Number	Number	Number	Number	Number
Farmed in 1944:							
Single-property unit:							
Cropped in 1944	39	0	2	2	17	17	1
Not cropped in 1944	14	0	0	0	0	0	14
Headquarters unit	27	3	3	3	12	2	4
Part of 2 or more units	18	1	2	2	3	8	2
Farmed with other land:							
Occupied	15	0	0	2	3	5	5
Unoccupied	40	4	1	6	6	9	14
Total farmed	153	8	8	15	41	41	40

1/ Combined acreage in the first 3 physical land classes as mapped by soil type, slope, and erosion class. (See table 1.)

2/ No crops harvested on 38 properties; none situated on land suitable for crops on the 2 remaining properties.

Table 41.- Number of sample properties with specified percentages of harvested crops on land suited to crops, Fluvanna County, Va., 1944 1/

Use or operation	Properties farmed	Percentage of harvested cropland on land suited to crops					
		100 percent	80-99.9 percent	60-79.9 percent	40-59.9 percent	20-39.9 percent	Under 20 percent 2/
	Number	Number	Number	Number	Number	Number	Number
Farmed in 1944:							
Single-property unit:							
Cropped in 1944	39	14	13	4	6	1	1
Not cropped in 1944	14	0	0	0	0	0	14
Headquarters unit	27	12	4	3	3	1	4
Part of 2 or more units	18	2	5	4	3	2	2
Farmed with other land:							
Occupied	15	4	3	2	1	0	5
Unoccupied	40	15	5	4	2	0	14
Total farmed	153	47	30	17	15	4	40

1/ Combined acreage in the first 3 physical land classes as mapped by soil type, slope, and erosion class. (See table 1.)

2/ No crops harvested on 38 properties; none situated on land suitable for crops on the 2 remaining properties.

Table 42.- Number of sample properties farmed or not farmed held by white and Negro owners or publicly owned, Fluvanna County, Va., 1945

Use or operation	Sample properties	Properties held by -						
		White owners			Negro owners			Other 1/
		Total	Living	Estate	Total	Living	Estate	
	No.	No.	No.	No.	No.	No.	No.	No.
Farmed in 1944:								
Single-property unit:								
Cropped in 1944	39	30	28	2	9	8	1	0
Not cropped in 1944 2/	14	7	7	0	6	2	4	1
Headquarters unit	27	16	15	1	11	4	7	0
Part of 2 or more units	18	14	13	1	4	2	2	0
Farmed with other land:								
Occupied	15	11	9	2	4	2	2	0
Unoccupied	40	23	19	4	14	4	10	3
Total	153	101	91	10	48	22	26	4
Not farmed in 1944:								
Rural residences	36	7	5	2	28	18	10	1
Churches, schools, cemeteries	14	0	0	0	0	0	0	14
Idle tracts	9	6	5	1	3	2	1	0
Abandoned tracts	34	20	14	6	13	9	4	1
Forest tracts	54	32	28	4	17	12	5	5
Total	147	65	52	13	61	41	20	21
Total sample	300	166	143	23	109	63	46	25

1/ 25 publicly owned properties.

2/ Contained 1 commercial poultry enterprise; no farming on remaining 13 units in 1944, but at least a horse, mule, or cow was kept on the premises.

Table 43.- Number of sample properties farmed and not farmed held by individuals residing on place or elsewhere, or which were in estates or publicly owned, Fluvanna County, Va., 1945

Use or operation	Sample properties	Owners residing -					Estates	Other 1/
		On place	Elsewhere -					
			In county	Nearby county	In State	Outside State		
	No.	No.	No.	No.	No.	No.	No.	No.
Farmed in 1944:								
Single-property unit:								
Cropped in 1944	39	32	0	2	1	1	3	0
Not cropped in 1944 2/	14	8	0	0	1	0	4	1
Headquarters unit	27	16	0	1	1	1	8	0
Part of 2 or more units	18	12	2	0	1	0	3	0
Farmed with other land:								
Occupied	15	6	4	0	1	0	4	0
Unoccupied	40	0	12	6	2	3	14	3
Total	153	74	18	9	7	5	36	4
Not farmed in 1944:								
Rural residences	36	19	1	1	0	2	12	1
Churches, schools, cemeteries	14	0	0	0	0	0	0	14
Idle tracts	9	0	2	2	1	2	2	0
Abandoned tracts	34	0	7	2	1	13	10	1
Forest tracts	54	0	20	6	7	7	9	5
Total	147	19	30	11	9	24	33	21
Total sample	300	93	48	20	16	29	69	25

1/ 25 publicly owned properties.

2/ Contained 1 commercial poultry enterprise; no farming on remaining 13 units in 1944, but at least a horse, mule, or cow was kept on the premises.

Table 44.- Number of sample properties farmed and not farmed held by farmers and those otherwise engaged, Fluvanna County, Va., 1945 1/

Use or operation	Sample properties	Owners -					
		Employed					Not employed 4/
		Farming	Farming-other		Other		
			Business 2/	All labor 3/	Business 2/	All labor 3/	
	No.	No.	No.	No.	No.	No.	No.
Farmed in 1944:							
Single-property unit:							
Cropped in 1944	36	14	4	13	1	3	1
Not cropped in 1944 5/	9	0	0	1	2	1	5
Headquarters unit	19	7	2	7	1	1	1
Part of 2 or more units	15	2	4	5	1	2	1
Farmed with other land:							
Occupied	11	0	2	0	3	3	3
Unoccupied	23	3	6	4	3	6	1
Total	113	26	18	30	11	16	12
Not farmed in 1944:							
Rural residences	23	0	0	0	0	19	4
Idle tracts	7	0	0	0	2	4	1
Abandoned tracts	22	1	1	0	4	10	6
Forest tracts	38	4	6	2	8	14	4
Total	90	5	7	2	14	47	15
Total sample	203	31	25	32	25	63	27

1/ Privately owned properties exclusive of 69 estates and 3 tracts for which the owner's occupation was unknown.

2/ Professional workers combined with businessmen.

3/ Workers employed for salary, wages, or commissions.

4/ Housewives and elderly or physically incapacitated persons.

5/ Contained 1 commercial poultry enterprise; no farming on remaining 8 units in 1944, but at least a horse, mule, or cow was kept on the premises.

Table 45.- Number of sample properties farmed and not farmed with dwellings occupied year-long, occasionally, or unoccupied but habitable, Fluvanna County, Va., 1945 1/

Use or operation	Sample properties	Occupied properties	Dwellings occupied					Dwellings unoccupied but habitable
			Year-long				Occasionally	
			Total	Owner	Part-owner	Tenant		
	No.	No.	No.	No.	No.	No.	No.	No.
Farmed in 1944:								
Single-property unit:								
Cropped in 1944	39	39	39	32	2	5	2	5
Not cropped in 1944	14	14	17	8	5	4	0	0
Headquarters unit	27	27	29	16	8	5	0	2
Part of 2 or more units	18	18	24	12	4	8	0	0
Farmed with other land:								
Occupied	15	15	16	6	4	6	0	1
Unoccupied	40	0	0	0	0	0	0	8
Total	153	113	125	74	23	28	2	16
Not farmed in 1944:								
Rural residences	36	36	42	19	12	11	1	1
Idle tracts	9	0	0	0	0	0	0	7
Abandoned tracts	34	0	0	0	0	0	0	0
Forest tracts	54	0	0	0	0	0	0	0
Total	133	36	42	19	12	11	1	8
Total sample	286	149	167	93	35	39	3	24

1/ Excludes 14 properties occupied by schools, churches, and cemeteries.

Table 46.- Number of occupied sets of buildings on which improvements were added or on which no additions were made by current owners, sample area, Fluvanna County, Va., 1945

Use or operation of property	Occupied buildings 1/	Dwelling and other buildings added	Dwelling remodeled and other buildings added	Dwelling remodeled only	Other buildings added only	No apparent additions
	No.	No.	No.	No.	No.	No.
Farmed in 1944:						
Single-property unit:						
Cropped in 1944	39	18	4	8	2	7
Not cropped in 1944	17	8	0	2	1	6
Headquarters unit	29	15	3	2	4	5
Part of 2 or more units	24	12	5	3	1	3
Farmed with other land occupied	16	3	1	3	0	9
Total	125	56	13	18	8	30
Not farmed in 1944:						
Rural residences	42	21	0	4	0	17
Total	42	21	0	4	0	17
Total occupied	167	77	13	22	8	47

1/ Includes only sets of buildings occupied on year-long basis.

Table 47.- Number and percentage of farms with specified work power, Fluvanna County, Va., 1950 and 1954

Class of work power	1950		1954 1/	
	Number	Percent	Number	Percent
Tractor only	75	8	154	20
Tractor and work animals	99	11	158	20
Work animals only:				
2 or more	282	32	105	14
1 only	175	20	110	14
No work power	258	29	246	32
Total	889	100	773	100

1/ Preliminary

U. S. Census of Agriculture (16).

Table 48.- Percentage of farms reporting cattle and other livestock on farms, and number reported, Fluvanna County, Va., 1945 and 1954

Livestock	1945		1954 1/	
	Farms reporting	Quantity	Farms reporting	Quantity
	Percent	Number	Percent	Number
Cattle and calves:				
All cows:				
Milk cows	78	1,759	70	1,788
Other	2/	1,710	2/	3,082
Other cattle	2/	1,898	2/	3,814
Total	81	5,367	83	8,684
Sheep and lambs:				
Ewes	2	542	4	836
Other	2/	244	2/	319
Total	2	786	4	1,155
Hogs and pigs:				
Sows and gilts	20	378	25	576
Other	2/	2,398	2/	2,920
Total	59	2,776	70	3,496
Chickens	88	64,045	60	40,248

1/ Preliminary.
2/ Not available.

U. S. Census of Agriculture (16).

Table 49.- Real estate transfers, Fluvanna County, Va., 1941-54

Year	Transfers	Average size of tracts	Price per acre		Part on credit
			Cash sales	Credit sales	
	Number	Acres	Dollars	Dollars	Percent
1941	78	107	10	16	23
1942	79	109	10	23	26
1943	122	111	14	19	25
1944	118	73	15	20	23
1945	149	80	19	25	21
1946	131	102	20	40	24
1947	127	86	27	37	18
1948	108	82	28	47	20
1949	97	98	25	44	26
1950	88	104	26	41	8
1951	133	102	30	43	9
1952	93	83	31	89	15
1953	77	93	28	83	17
1954 1/	66	82	45	72	17

1/ Preliminary.

Unpublished data compiled in connection with annual survey of the Virginia real estate situation.

Table 50.- Owners reporting investments in land, improvements and debt reduction with income from farm and nonfarm sources, Fluvanna County, Va., 1945

Source	Owners reporting investments		Investment 1/	
	Number	Percent	Dollars	Percent
Investment in land:				
Farm	11	7	18,247	13
Inheritance	5	3	4,250	3
Business	40	26	84,837	60
Labor	83	55	31,555	22
Other (bonuses, etc.)	6	4	2,995	2
Combinations	7	5	---	2/
Total	152	100	141,884	100
Investments in improvements:				
Farm	17	16	24,554	19
Inheritance	2	2	14,400	11
Business	16	15	41,160	32
Labor	55	50	42,585	34
Other (bonuses, etc.)	7	6	5,185	4
Combinations	12	11	---	2/
Total	109	100	127,884	100
Investment in debt reduction:				
Farm	7	13	3,403	11
Inheritance	0	0	1,000	3
Business	8	15	14,050	43
Labor	32	60	12,531	38
Other (bonuses, etc.)	3	6	1,737	5
Combinations	3	6	---	2/
Total	53	100	32,721	100

1/ Investment allocated according to source.
2/ Less than 0.5 percent.

Table 51.- Number of sample properties containing specified acreages suited to crops, by class of dwelling, Fluvanna County, Va., 1945

Class of dwelling 1/	Sample properties 2/	Acres suited to crops 3/						
		200 and more	100-199	50-99	20-49	10-19	5-9	Under 5
	No.	No.	No.	No.	No.	No.	No.	No.
Excellent	19	2	2	6	4	1	1	3
Good	60	5	3	11	14	9	10	8
Fair	52	2	5	10	9	9	8	9
Poor	37	1	6	2	7	8	5	8
None 4/	118	1	12	9	22	23	17	34
Total sample	286	11	28	38	56	50	41	62

1/ Includes only best or highest class dwelling on properties with more than one dwelling.
2/ Excludes 14 properties occupied by churches, schools, and cemeteries.
3/ Combined acreage in the first 3 physical land classes as mapped by soil type, slope, and erosion class. (See table 1.)
4/ Dwelling no longer repairable, gone or never existed.

Table 52.- Number of sample properties containing specified acreages of cropland, by class of dwelling, Fluvanna County, Va., 1945

Class of dwelling 1/	Sample properties 2/	Acres of cropland 3/					
		100 and more	50-99	20-49	5-19	1-4	None
	No.	No.	No.	No.	No.	No.	No.
Excellent	19	1	3	6	5	1	3
Good	60	2	4	11	20	8	15
Fair	52	1	1	12	18	4	16
Poor	37	1	1	5	9	7	14
None 4/	118	0	0	4	15	8	91
Total sample	286	5	9	38	67	28	139

1/ Includes only best or highest class dwelling on properties with more than one dwelling.
2/ Excludes 14 properties occupied by churches, schools, and cemeteries.
3/ Includes crops harvested, crop failure and idle cropland.
4/ Dwelling no longer repairable, gone or never existed.

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